Appendix

1. Letters of Support
2. Boone County Schools Strategic Plan
3. EdLeader21 21st Century Skill Rubrics
4. OECD's PISA assessment
5. Teacher Vote

NORTHERN KENTUCKY Education Council

October 29, 2015

District of Innovation Selection Committee
Kentucky Department of Education
500 Mero Street, 8th Floor CPT
Frankfort, KY 40601

Dear District of Innovation Selection Committee,

It with great pleasure that I respectfully submit this letter of support on behalf of the Northern Kentucky Education Council(NKYEC) for the Boone County School District's application to receive the designation as a District of Innovation.

The Council is the backbone organization for the alignment of education initiatives in Northern Kentucky (NKY). As such, the organization serves as the catalyst for collaboration, change, and progress toward regional educational goals through collective impact and data-driven strategies in the following six counties: Boone, Campbell, Gallatin, Grant, Kenton and Pendleton.

Boone County School District's Innovation Application and the Imagineering Academy are in direct correlation with four of our established goals for the Northern Kentucky region:

1. Reduce barriers to learning for all students; birth to career,
2. Increase the number of youth who are hopeful, engaged and thriving,
3. Ensure that all students are ready for college, career and life, and
4. Assure that meaningful business engagement and service learning opportunities exist in all schools.

As a Council we unequivocally believe that the Boone County School District's model of Innovation not only builds, but additionally strengthens their students' passion for learning. By creating unique opportunities the District is increasing the number of youth who are hopeful, engaged and thriving. Gallup's forty years of social science research indicate that these three constructs are key predictors for academic success and future persistence in life.

The virtual school, access to passion based learning, and the NKY Makerspace all play a part in reducing barriers to learning and allow students to access anywhere/anytime education along with materials and tools that would be otherwise unavailable. We are further encouraged by the Early College Program as well as the Boone County School of Design and Robotics program. These programs will serve to increase the number of students that are prepared for college, career and life.

The Council's overarching goal is a commitment to each one of our youth in NKY that as leaders we work on their behalf to ensure that they have equitable access and opportunity to become prepared for college, career and life. The Boone County School District application outlines an exemplary model of a District of Innovation. As a region we are focused on what matters most, and we respectfully encourage you to name Boone County Schools a District of Innovation.

Sincerely,

Polly Lusk Page

Polly Lusk Page
Executive Director
Northern KY Education Council

School-Based Scholars
University Center 127
Nunn Drive
Highland Heights, Kentucky 41099
859.572.5498
schoolbasedscholars.nku.edu

October 29, 2015

Dear Innovation Selection Team,

As state and national interests continue to support providing additional opportunities for students to help them prepare for and be successful in life after high school, Northern Kentucky University (NKU) has been pleased to support and offer dual-credit opportunities for high school students in the last ten years. Among the many school districts we have partnered with, Boone County Schools have been one of our staunchest supporters and committed to offering students every opportunity for dual-credit.

In 2014, NKU saw a number of exciting things happen in Boone County Schools, including a broader and more inclusive reach of dual-credit offerings in all schools. This in turn has allowed students to earn at least a minimum of 6 credit hours each year in the program while working towards completing many of our general education requirements. In addition, over the last decade our University has worked with Boone County Schools through a variety of other partnerships. We hope that our experience will be helpful in their selection.

We are excited about Boone County's application for District of Innovation status and we are very excited to continue expanding our role in their Early College program—a program that began in 2014 through a collaboration with the District in its development and planning of Boone County's Early College. As a result of this cooperation among NKU, Boone County Schools, and other local colleges; this program will allow high school students to earn 24 college credit hours in a year. In our first semester of participating in the Early College, we have over 40 students enrolled and the results of student success and program success look promising.

As this Early College program continues to progress, we will be meeting and revising our work based on an evaluation of the first year and anticipating future needs. NKU is excited about the future of this Early College program and working with Boone County Schools. We believe that their District of Innovation status is well-deserved and will serve as a catalyst for helping to eliminate barriers and open up doors for even more student participation.

I appreciate your time and consideration in reading this recommendation.

Sincerely,

James Catchen
School-Based Scholars Coordinator
Northern Kentucky University

ROBERT EHMET HAYES & ASSOCIATES, PLLC ARCHITECTS

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ROBERT EHMET HAYES (1961-2009)
MICHAEL BRENT BISHOP
R. EHMET HAYES
JOSEPH AHRENS HAYES
RYAN THOMAS FICKE

October 28, 2015

Mr. Jerome Gels, Principal
Boone County Alternative Program
99 Center Street
Florence, Kentucky 41042

Re: Boone County Schools
A District of Innovation

Dear Jerry:

Over the past several decades, our firm has worked closely with Boone County Schools on a number of different levels and we have enjoyed the mutually beneficial relationship we have maintained. Our firm has a detailed knowledge of the District, its buildings and its systems, which is a great benefit in assisting the District in staying on its path of growth and continual improvement.

In addition to offering our design services and assistance with the District's construction projects, we have committed to supporting the youth of Boone County and the entire community for a very long time. We participate financially and give our time for numerous activities and events which include, but are not limited to:

- School proms and career days
- Boone County Educational Foundation
- Sports events
- Leadership and Board conferences
- Student and achievement sponsorships
- Conventions, workshops and personnel events

We are excited to be reviewing Boone County Schools' application for a District Of Innovation for the Imagineering Academy, in particular the Entrepreneurship / Homebuilders Program. As an organization closely tied to the construction industry, we understand the need for hands-on opportunities in the associated construction trades. With recent growth experienced in the region, which is not anticipated to slow in coming years, there will be many more buildings to be constructed and it is important that high school students have access to these innovative types of programs to prepare them for success in college, career and life.

We believe Boone County Schools is an outstanding school system and are always impressed with the numerous innovative practices they continually develop. To this end, we strongly support the application for a District of Innovation Status.

Best regards,

Ehmet Hayes

EH/aes

NEWPORT®
ON THE LEVEE
A WORLD AWAY FROM THE EVERYDAY

October 30, 2015

Dear Sir or Madam,

My name is Christy Gloyd and I am the Marketing Director at Newport on the Levee. We have reached out to the Boone County School of Design for a few marketing needs this year for the BRICKmas event that will be hosted in November and December. In addition, we have reviewed the District of Innovation Application.

The work that is being produced by the Boone County School of Design is sophisticated and professional. Their ability to capture the visual marketing needs of the event was clever and we are excited to see what else this team of high school students will create. In December, we will host the young designers and present our marketing roles to the group. In addition, we hope to present the group with visual marketing need that they may be able to help fill.

We are even more excited to hear that this is the pilot year for the program and that school through the Imagineering Academy is hoping to expand to include potentially well over 100 students annually. We support Boone County Schools application for District of Innovation.

Regards,

Christy Gloyd
Marketing Director
Newport on the Levee

northlich

720 E.Pete Rose Way
Cincinnati, Ohio 45202
p 513.421.8840
northlich.com

10.19.15

Dear Innovation Review Committee.

Over the last year I have worked with Boone County Schools in the development of the Boone County School of Design that will rest in the Imagineering Academy. I am very excited about the work Boone County Schools is beginning and will continue to help support the program as implementation takes place.

The Boone County School of Design is important to me as it is one of the only programs in the region that exists to address a major gap in our tri-states secondary systems that will fix one of the area's biggest career needs. The Northern Kentucky and Greater Cincinnati area is home to many marketing, branding, and consumer product businesses. The region is growing exponentially with new brands, start-ups, and established companies. Cincinnati is becoming "The Branding Capital of the World." The United States alone is expected to add 2.5 million jobs to this area of employment. With such a high need in this area, and the changes in technology that change they way we produce designs and concepts, it is encouraging to us to see a large school district work to address this need.

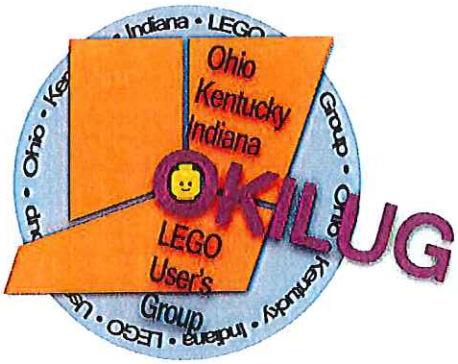
In the last year Northlich has provided job shadowing, professional development, and field trips for perspective students. Working with others in the region I consulted Boone County Schools on development of the School of Design as to the essential skills and direction the program should go. At Northlich, we strive to create a community where we develop and grow the future of our industry. We believe the Innovative Status is deserved and know that it will help increase enrollment to this program.

If you have any questions please feel free reach out to me.

Regards,

Laura Gels

Associate Creative Director | northlich
720 E. Pete Rose Way | Cincinnati OH 45202
Work: 513.287.1809 | Mobile: 513.265.5660



Dear Innovation Committee,

My name is Rodney Dicus I am the President of OKILUG, one of the largest Lego User Groups in North America, a firefighter/paramedic, and parent of college student and Boone County Graduate. I hope my recommendation and experience with Boone County's School of Design will be valuable in your organization in the evaluation of Boone County Schools Innovation Status application.

In the late summer of this year I met with students in the pilot program of the Design School. I have to say I was extremely amazed by the work that the students were doing. So much so that my organization, OKILUG, has signed on as a client and evaluator. We now have the students working to create exhibits, backdrops, and other items for our numerous shows that we do during the year. Our team was so impressed with the creativity that students are demonstrating that we are now providing the students the Lead N' Brick scholarship of $1500. There work will be seen by over 50,000 people annually and it is as professional as anything we have contracted out.

As a parent of a student that is now enrolled in a college design program I am excited and somewhat saddened by what I am seeing. I am excited because of what the students are working on and with the same kind of technologies and work my son is doing in college. I am sadden because I wish my son would have had a chance to be in the Boone County School of Design and Imagineering Academy when he was still a high school student.

Regards,

Rodney W. Dicus 10-30-2015

Rodney Dicus

OKI Lug President

THOMAS MORE
COLLEGE
TOGETHER IN PURSUIT OF TRUTH

Dear Kentucky Innovation Selection Team,

In 2014 Thomas More College expanded its long-standing relationship with the Boone County Schools. This growth particularly focused on the extension of our Dual Credit offerings, including students taking classes on campus in an "Early Admission" capacity, eligible Boone County Teachers offering classes for dual credit options and, most recently, participating in their exciting Early College Initiative. Over the last few decades we, and I personally, have worked with the Boone County Schools in a number of capacities, in the Advanced Placement (AP) and Dual Credit areas, and hope that such a partnership will be an indication of how Boone County would be deserving of your consideration in selecting the next School of Innovation.

During that year, we met with Boone County representatives to develop their Early College Program. We have worked with Northern Kentucky's two other post-secondary institutions to jointly offer a wide variety of classes that would fulfill many of the general requirements at any college or university in the country. This year Thomas More College is offering multiple sections of World Civilization I and II during both semesters. Our deep commitment to the program is such that the Chairperson of the Department is one of the faculty teaching a section. Impressively, depending on the course selection, students have the opportunity to earn as many as 24 credit hours in a single year of high school.

We certainly believe that the Innovation Status is deserved by the Boone County Schools in recognition of their progressive approaches for helping their students. We are excited about our participation in the Early College Program and the ongoing programs that have benefited their students and Thomas More College for many years.

Sincerely,

Raymond G. Hebert

Raymond G. Hebert, Ph.D.
Full Professor of History
Dean of the College Emeritus
Director of the Gemini Dual Credit Program
Thomas More College

Edgewood Campus
790 Thomas More Parkway
Edgewood, KY 41017
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Fax: (859) 341-6859
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Dear Innovation Committee,

Over the last five years Gateway Community and Technical College has worked with the Boone County School System in a number of different capacities. We are excited about the application for Innovation Status and look forward to future programs where Gateway can partner with Boone County Schools. We hope that our comments will be useful to you in grading.

Beginning in 2014, Gateway and Boone County Schools started work on the planning and implementation of the Boone County Early College program. This program allows high school students to earn 24 college credit hours in a year while coming on campus and experiencing college in its environment. It pleases me to report that in our pilot year we have over 40 students enrolled in the program and the results look promising. Outside of the Early College program, Gateway is hosting the Boone County School of Design on our campus. In planning for the near future, our instructors are partnering with a team from Boone County Schools to investigate starting a robotics program.

As you can see, there are a number of innovative programs coming from the Boone County School District. We believe the Innovation Status is deserved and that it will help to eliminate barriers while opening doors for more student participation.

If you wish for more information about the programs or our partnership, please feel free to contact me directly.

Regards,

Shelby Krentz
Director of Early College Initiatives
Gateway Community and Technical College
Shelby.Krentz@kctcs.edu
859-815-7648

Automotive Steering

BOSCH

October 28th, 2015

Robert Bosch
Automotive Steering LLC
15 Spiral Drive
Florence, KY 41042

Subject PiBotics FRC 3814

Dear Selection Committee,

Over the last 12 months we have worked with Boone County Schools with the NKY Fame program. The NKY FAME program AME (The Kentucky Federation for Advanced Manufacturing Education) is a company-sponsored partnership of regional employers who share the goal of creating a pipeline of highly skilled workers. Employers actually start recruiting students while they are still in school. Students receive hands-on and classroom training that gives them access to high-paying advanced manufacturing jobs.

Most recently we have met with Boone County Schools to support the First Robotics program and their new robotics curriculum. In October of this year we met with the Boone County Team and we are now sponsoring the First Robotics team over $45,000 in monetary and equipment support.

We are excited to be working with Boone County Schools and through their Imagineering Academy and we support their Innovation Application. We hope to see 100s of promising Engineers in the high school robotics programs over the next few years.

Yours sincerely,

Mary Grace Cassar
Organizational Development
Process Manager

Andy Davis
Senior Control Engineer

BOONE COUNTY HIGH SCHOOL

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Florence, KY 41042-1697
(859) 282-5655
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Mark A. Raleigh, *Principal*

Timothy Schlotman, *Asst. Principal*
Michael Neuhaus, *Asst. Principal*
George Floyd Jr., *Asst. Principal*

Katie Parks, *Counselor 12th*
Theresa Meyer, *Counselor 11th*
Holly Jones, *Counselor 9th*

October 28, 2015

Dear Reviewer,

Over the last few years we have developed and begun piloting several programs within the Boone County Center for Alternative Education. The programs support the four host schools with additional behavioral supports, academic achievement and dropout prevention, and academic intervention. In addition, students from all four high schools have enrolled in both the Boone County School of Design and Boone County Early College. Currently there are over 210 students enrolled in a variety of these programs.

On behalf of the four High School Principals (Michael Wilson, Cooper High School, Mark Raleigh, Boone County High School, Matt Turner, Ryle High School and Tim Hitzfield, Conner High School) I am writing you to let you know we support the Boone County Innovation Application and the Imagineering Academy. We expect the number of students supported in the various programs to increase to help meet the expected district outcomes including:

1. Affordable post secondary degree attainment

2. Increased participation in Career and technical programming

3. Increased graduation rate and high school diploma achievement

Please let us know if you have further questions that need to be addressed.

Thank you for your time,

Mark Raleigh
Principal
Boone County High School

GORILLAMAKER.COM
3DPRINTERS

1924 Alexander Rd
Verona, Ky 41092

10/28/2015

Dear Kentucky Department of Education,

We have worked with Boone County Schools in the Development of the NKY MakerSpace over the last year. We are excited about the NKY MakerSpace and the Imagineering Academy.

At GorillaMaker.com we are committed to providing quality, precision machinery, made in the USA and backed by real people that are dedicated to exceeding customer expectations. We are excited to be apart of the emerging 3D technology and understand the potential this technology brings to the world. In working with Boone County Schools we know they see that potential as well. The NKY MakerSpace is the only district sponsored Maker Space in the region and it is the only program that has MakerSpace interns.

Through the NKY MakerSpace and the Imagineering Academy students will gain access to tools and opportunities that have seldom been available to high school students. We support the application and hope that you will name Boone County Schools a District of Innovation.

Sincerely,

Glenn Warner
"Zookeeper"
GorillaMaker.com
(859) 918-9900

Boone County Schools
2015 STRATEGIC PLAN
OVERVIEW

MISSION:

Representing and in partnership with our stakeholders, the Boone County School District recognizes that all children can learn and dedicates itself to providing a challenging educational environment that allows each student to achieve to his or her highest potential as a learner and citizen.

THEORY OF ACTION:

If Boone County Schools operate as Professional Learning Communities focused on high quality instruction for the 21st century, then teaching, learning, and student performance will improve for every student in every classroom every day.

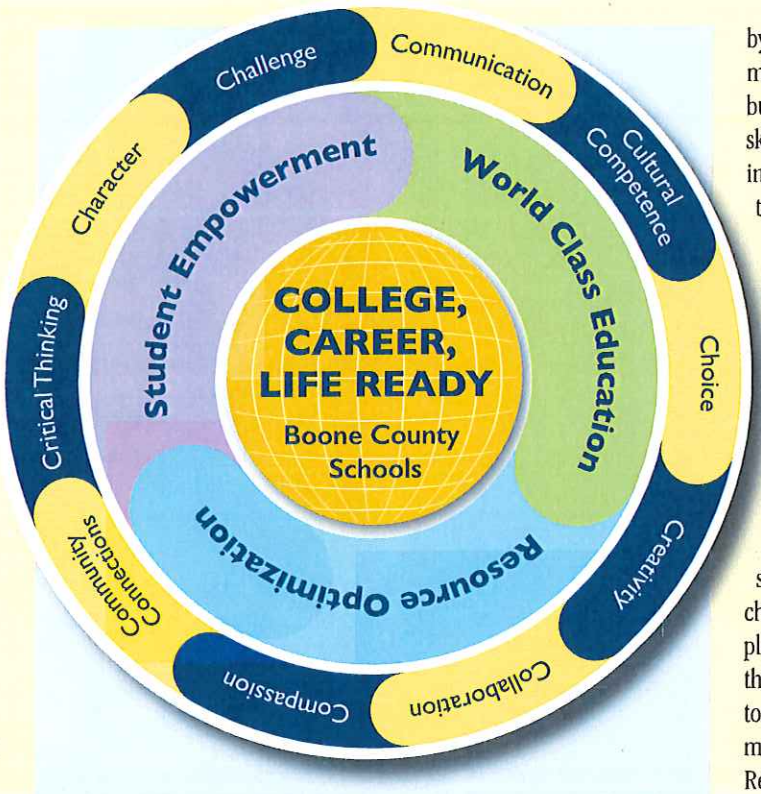
CORE VALUES:

- Academic excellence
- Lifelong learning and continuous improvement
- Shared responsibility
- Respect for all students
- Stakeholder empowerment and engagement
- Preparing next generation learners

VISION:

Every graduate college, career, and life ready.

Through community, staff, and student conversations across the District, Boone County Schools gathered input on what the District's residents think should be the future of education. Our goal was to define what our community wants students to know for the future using a process developed by EdLeader 21 (an international member organization focused on building our students' 21st century skills). We wanted to learn what's important to our community by talking to our taxpayers, business leaders and parents who support our district. This input was used to create the District's five-year strategic plan. Our community developed the 10C's of what we want for our students and schools. These are collaboration, communication, critical thinking, creativity, cultural competence, character, compassion, community connections, choice and challenge. The District's plan is for all students to develop these skills through a commitment to three areas: Student Empowerment, World-Class Education, and Resource Optimization.



BY MAY 2020:

Student Empowerment

All students are involved in leadership skills/ career skills development with a focus on hope/ wellbeing/engagement and are engaged in authentic, personalized career exploration experiences.

World-Class Education

All teachers use Understanding by Design framework and philosophy to plan units of instruction. Within UbD units of instruction, students are engaged in PBL/ service learning experiences.

Resource Optimization

All District departments and divisions engage in process and performance management measures to optimize resources, increasing efficiency and effectiveness. Virtual and blended course offerings, as well as flexible schedules will be in place to meet the diverse needs of students.

GOALS:

All learners will demonstrate the 21st century skills and knowledge that will prepare them for success in college, career, and life. They will develop the leadership and character skills needed to become productive, compassionate, thriving global citizens. Students will learn through active engagement, collaboration and exploration of personal interests, talents and ambitions. Teachers and students will use inventive technology and 21st century tools to enhance learning. The District will utilize effective process and performance management strategies to provide resources and will engage the community in understanding and supporting the plan.

Continued on next page

Boone County Schools
2015 STRATEGIC PLAN
OVERVIEW

OBJECTIVES:

Goal 1: Student Empowerment

Character: Student leadership, hope, wellbeing, and engagement

In order to develop the 21st skills necessary to be successful in the future workplace, students need experiences that build leadership, hope, wellbeing, and engagement, as well as grit, perseverance, and work ethic. These experiences will come from District-wide student leadership training, as well as personalized planning, and expanded learning opportunities.

- Each school will focus on leadership/career skill development.
- Use Gallup data to work with students on personalized action plans.
- Utilizing community resources, offer expanded learning opportunities to all students.

Community Connections: Career Exploration

Students will graduate with a strong passion for a career direction, as well as having real-world community connections to explore a career path.

- Students will participate in career experiences such as career circles, job shadowing, mentoring and internships to explore areas of interest.
- Career courses, career counseling, and career pathways will focus on the future workplace.
- Exit interviews at transition points will assist students in identifying career direction

Goal 2: World-Class Education

Critical Thinking, Communication, Challenge: UbD

Choice, Creativity, Collaboration: PBL

Compassion, Cultural Competence: Service Learning

Understanding by Design (UbD) will be used as the District instructional framework, focused on enduring skills and understandings and transfer of these skills to all instructional endeavors. The 21st century skills of critical thinking and communication will be intentionally planned for and taught. Additionally, teachers will provide opportunities for all students to be challenged within their zone of proximal development. A focus on mastery learning will be evident throughout lesson and unit plans developed through UbD. BCS will create project/problem/passion based learning experiences for students to apply core knowledge, concepts and 21st century skills, within and across disciplines, to solve real-world problems. PBL experiences will intentionally focus on building creativity and collaboration skills, as well as providing choice. Problem based service learning is integral to academic success fostering positive youth development while addressing real community needs. Through service learning opportunities, students will engage in global outreach as well as local outreach. Students will intentionally build compassion and cultural competency through BCS service learning experiences.

- All teachers will utilize UbD framework to plan curriculum, lessons
- Mastery learning evident in all classrooms with effective formative assessment.
- Students will engage in service learning projects that are part of PBL experiences within UbD-developed units.

Goal 3: Resource Optimization

Connectivity: System Performance and Resource Optimization

- Schools and District departments and divisions will utilize process and performance management principles
- Use dispositional hiring practices
- Utilize protocol/ process for teachers to visit other classrooms in the district to share ideas/ best practices; add to District repository
- Establish alternative methods for teacher collaboration
- Increase virtual and blended course offerings, performance-based credits; establish a hub for District programming
- Develop school of innovation which provides flexible schedules and innovative course offerings to meet the diverse needs of students

Teaching leadership skills

During the summer of 2014, one theme bubbled to the surface in each of the community conversations facilitated by Dr. Cheser, Chief Academic Officer and Deputy Superintendent for Boone County Schools. Student leadership. Often the conversation was centered around how to best develop soft skills or career-readiness skills, but in each conversation the undercurrent was the need for the schools to nurture the internal ability of each student to lead or to become a leader.

Often when we think of student leaders we imagine the class president, the Student Council officer or perhaps an officer with FFA or FBLA or National Honor Society. The word "leader" conjures an image of an eloquent speaker who can inspire others to achieve greatness. This is certainly a version of the leadership we aim to develop within each student, but of more importance is the need to teach children to lead their own lives, independently and with success.

During the summer of 2014, the superintendents, directors, and principals of the Boone County Schools participated in a Skype chat with Yong Zhao. Dr. Zhao is an acclaimed author and speaker who presents internationally on the impact of technology and globalization on education. Dr. Zhao suggested from his research that today's parents are producing a generation of children who are content to live in their parents' basements. At first, giggles were heard around the room. Then reality. Then deep thought.

Our students are bright, they are joyful, they are energetic, they are passionate. Many, however, are unable to organize their tasks easily, they have difficulty with work completion and prioritizing, and solving conflict among friends can be difficult. Our goal is to help build these career and leadership skills so that they can be successful not only in school, but in life. While all of our schools are intentionally teaching leadership skills, some, such as Longbranch Elementary, are implementing the Leader in Me program. This program teaches students to become leaders of their own lives by learning skills that will become habits so that they may succeed in their school lives, at home, and in their futures. Simple lessons that focus on big ideas such as "Begin with the End in Mind" or "Seek First to Understand, Then to Be Understood" help our children learn to lead themselves and their peers. Students who have mastered the habits are given responsibilities within the school culture to demonstrate and practice their skills. Through these leadership responsibilities, students learn to organize, collaborate, solve problems, and think critically — critical skills for their future.

Student leadership opportunities

Amazing Gifted and Talented (GT) Leadership opportunities are accessible in numerous avenues in the Boone County Schools. Our Superintendent's Student Advisory Council meets monthly with student representatives from all 23 schools. Students work each month on developing their own leadership skills, listening and sharing experiences from a District principal/ administrator, plan and complete service learning projects, and meet with Dr. Poe to discuss concerns and share ideas from their own schools. The student leader of this group also serves as a student member of the Boone County Board of Education with Dr. Poe and reports updates and reflections at our monthly board meetings. The BCYC (Boone County Youth Cabinet) is a 20-member group of juniors with representation from all four Boone County high schools. This group focuses on government leadership skills and meets monthly at a variety of sites including city, county, and district government sites. They tour facilities and meet with government officials to gain additional knowledge involving their leadership roles and responsibilities. In February, we traveled to Frankfort to tour the capitol, attend a congressional session, and meet with our Northern Kentucky legislative representatives. This past fall over 100 of our GT high school young women attended the 4th Annual Young Women LEAD Conference at NKU. This event was sponsored by Toyota and was designed to inspire these young women to believe in their qualities and strengths, and to challenge them to believe in a higher level of personal growth and development. The young women experienced an amazing keynote speaker and had multiple opportunities to attend pull-out sessions which enhanced their leadership skills. Last fall our Middle School GT Leadership students attended the annual NKAGE Leadership Symposium for Gifted Learners at Thomas More College. Our students had the outstanding opportunity to be challenged by the keynote speaker, Dr. O'Dell Owens, to "reach beyond" and work to their highest potential in school and in life.

Continued on next page

Students also had the opportunity to attend break-out sessions led by gifted and talented teachers from Northern Kentucky area school districts. Students in our Boone County Schools have multiple opportunities to develop and improve their leadership skills through club activities, Project Based Learning occasions, Service Learning opportunities, activities and projects daily in our classrooms and by attending community and state conferences / events.

Gifted and Talented services in Boone County Schools consists of a variety of identifications. Students are identified in Leadership, Creativity, General Intellectual Ability, Reading, Math, Science, Social Studies, Visual Arts, Dance, Drama, and Music. Gifted students are challenged daily in our classrooms by teachers using differentiated instructional practices which include opportunities to develop and apply high levels of critical, analytical, creative, and organizational thinking skills in all academic areas including Visual and Performing Arts. Gifted students are challenged in their daily studies in small and large groups using acceleration of content by studying a topic/ concept more in-depth and by studying topics/ contents across multiple disciplines.

College and career pathway programs

The Boone County School District has two exciting opportunities only available to students in our district. These are the first of many innovative college and career pathway programs designed to provide additional exploration and preparation for our students for the future workplace.

Boone County Early College

Through a partnership with NKU/ Thomas More/ Gateway College, students attend college for half a day (either morning or afternoon — spending the other half day at their school) at the Boone County Gateway campus with the potential of earning 24 college credit hours a year. These courses are provided at a dramatically reduced rate, saving the student thousands in future college expenses. This program also provides students with college-level experiences while students are still in high school, so that they are better prepared for the college experience. The courses are weighted and will transfer to any state two-year or four-year college. Transportation is provided from high schools; students may also drive. For more information or to express interest, go to: http://www.boonecountyearlycollege.com.

Boone County Design School

This new program, targeted to students interested in art/ design careers, such as app/ game graphic design, computer animation or web/ mobile design, is half day (morning or afternoon) at the Gateway College Campus (transportation provided). One of the most needed skill sets in Greater Cincinnati is design. The interactive media design program allows students to earn industry certifications in design, while sharpening skills and exploring the lucrative industries that rapidly need interactive designers. The program features interaction with designers, brand and marketing experts, and entrepreneurs. Roughly 3.5 million jobs are expected to be added to the economy in the creative design fields, with Greater Cincinnati being poised to be the area that will capitalize the most on this expansion.

Students enrolling in the program develop a portfolio, and work with local clients on design needs. The program is centered around project-based learning. (For more information or to express interest, go to: http://boonecountydesignschool.weebly.com/)

Service learning and PBL

Through a district-wide partnership with Children Inc., the Boone County School District is engaging all students in service learning experiences. Service learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. In Boone County, students engage in projects such as rehabbing bicycles, giving them to people across the globe who need them, while learning about engineering practices and global issues. Other projects include learning about water purification and supply and demand while building a business plan to raise funds for water systems to help communities in Africa. Service learning has a positive impact on students' academic learning as well as builds their compassion and civic engagement. It improves students' ability to apply what they have learned in "the real world" as well as develops skills such as problem-solving and critical thinking.

PBL is project/ problem/ passion based learning. Our goal is for every student to be engaged in at least one PBL experience each semester. It is an approach in which students actively explore real-world problems and challenges and acquire a deeper knowledge. They work for an extended period of time to investigate and respond to a complex question, problem, or challenge. By combining PBL and Service Learning, our students work to solve real community issues, learning to become productive, empathetic citizens. Whether students investigate what happens to their family's garbage or design an entire city, project-based learning aims to engage them in realistic, thought-provoking problems. Project-based learning creates opportunities for groups of students to investigate meaningful questions that require them to gather information and think critically, collaborating with each other, and presenting their solutions in creative ways. Typical projects present a problem to solve (How can we reduce the pollution in a nearby pond?); a phenomenon to investigate (Why do you stay on your skateboard?); a model to design (Create a scale model of an ideal high school); or a decision to make (Should the school board vote to build a new school?).

Project-based learning creates opportunities for groups of students to investigate meaningful questions.

NKY MakerSpace and expanded learning opportunities

The Boone County School District has partnered with Leadership NKY to create a place where kids (of all ages) and their families have access to the state-of-the-art tools that can spark creativity, nurture curious minds, and ignite the next wave of innovators. The space — open for field trips, after school, weekend, and summer programs — enables kids to build their own ideas with real tools and materials; inspiring and empowering kids to think, design, experiment and create — critical skills for STEAM careers.

The MakerSpace provides creative programs that empower children to learn new hands-on skills and make projects using electronics, 3D printing, robotics, woodworking, crafting, programming, and more.

Boone County's MakerSpace includes six rooms. The Robotics Room includes NXT's, EV3's, specialized LEGO parts for building, and computers for programming. The Design Thinking Room includes space for collaboration, whiteboard tables and 3D printers for creating kid-designed prototypes. The Make Your Own. . .Room has woodworking supplies for all ages, bridge building kits, soldering supplies, and a laser cutter. Makey-Makeys, Arduinos, Eggbots and little bits can be found in the Engineering Room. The Audio and Video Production Rooms include professional gear for students to create their own films and music. A large outdoor space is perfect for larger projects and performances. By visiting the MakerSpace, our students can put the 10 C's into action anytime.

The School District also provides additional expanded learning opportunities for students, such as Odyssey of the Mind and FIRST Robotics programs. Boone County Schools has more students involved in these programs than any other district in the state. Students hone their creativity, collaboration, communication, and critical thinking skills through programs such as these, working in teams after school and on the weekend, many winning state and national competitions.

Understanding by Design (UbD)

As part of its strategic plan, the Boone County Schools has adopted the Understanding by Design framework for improving student achievement. Understanding by Design or UbD for short, works within a standards-based curriculum to help teachers clarify learning goals, devise revealing assessments of student understanding, and craft effective and engaging learning activities.

At its heart, UbD is about "planning with the end in mind." In other words, teachers know their goal and what skills and knowledge students will need to reach that goal. These goals, skills and knowledge are agreed upon by teachers at the school and then instruction is designed around these goals. Goals are often split up into manageable chunks and time frames that include "what do my students need to know and do 30 days from now?" and "what do my students need to know and do six months from now?" This thinking helps teachers focus their teaching on what is most important and what will benefit students in the long term of their content. Through this process, we will have Kindergarten teachers understanding the demands on high school students and how their instruction has an impact long into the future.

One of the main facets of UbD is understanding. This is a shift from more traditional coverage and activity based approaches to teaching that do not as thoroughly prepare students with the 21st century skills they will need upon graduation from high school. Understanding comes when students are given multiple authentic opportunities to explain, interpret, apply, shift their perspective, empathize with a situation, and, most importantly, self-assess their own progress and learning. By looking through this stair-step lens, teachers are able to more accurately assess where students are understanding and what misunderstandings they may still have and revise their teaching accordingly.

Project Lead the Way

In our schools, Project Lead the Way (PLTW) is challenging students to learn in a new way.

Students enrolled in the first course of PLTW Biomedical Science program became detectives one fall morning when they arrived at school. The following excerpt of a case-based scenario was presented to them:

It was a hot summer morning, 92°F. An emergency call came in at 9:45 a.m. A man contacted the police to report that he was worried about his next-door neighbor, a woman named Anna. He said he had spoken to Anna the previous morning when he saw her walking her dog around 6:30 a.m. He decided to call the police this morning because Anna's dog had been barking excitedly for the last two hours. He tried to call Anna on the telephone, but no one answered. Both the police and an EMT arrived at the scene at 9:56 am. The EMT determined that Anna was dead. The police immediately notified your team of crime scene investigators as well as the medical examiner, both of which were dispatched to the house. Has a crime been committed?

Students immediately started the process of investigation, documentation, and analyzing evidence to solve the case and present his/her findings. PLTW Biomedical Science students acquire strong teamwork and communication practices, problem solve, collaborate, and think critically and creatively.

The rigorous and relevant four-course PLTW Biomedical Science sequence allows students to investigate the roles of biomedical professionals as they study the concepts of human medicine, physiology, genetics, microbiology, and public health. They examine the structures and interactions of human body systems and explore the prevention, diagnosis, and treatment of disease, all while working collaboratively to understand and design solutions to the most pressing health challenges of today and the future.

PLTW Gateway

PLTW Gateway is just what it sounds like, the middle school student's entry into problem solving using industry-leading technology. PLTW Gateway provides engineering and biomedical science curriculum for the students in our middle schools.

Students totally engage in rigorous and relevant experiences through activity, project and problem-based learning. During the first year, students in Design and Modeling work in teams to design a playground and furniture using Autodesk software. In the Automation & Robotics course, students use VEX Robotics to design, build and create real world objects. As the program expand in the District, specialization units such as Medical Detectives, Science of Technology, Flight and Space and other courses will be added to the curriculum.

Biomedical Science students work to understand and design solutions to health challenges.

Gateway is divided into eight independent, nine-week units and taught in conjunction with a rigorous academic curriculum.

As Boone County Schools prepare students for the global workforce, PLTW's Gateway program will provide a strong foundation for STEM learning and preparing them to be college, career and life ready.

Hiring for dispositions in Boone County Schools

Think back to the days when you were a student . . .Who was your favorite teacher? What made them your favorite teacher?

If we reviewed the list of responses for what made a teacher your favorite, we would find traits such as: caring, helpful, enthusiastic, positive, friendly, understanding, genuine — just to name a few. But how does one determine which teacher applicants possess these traits during the hiring process?

"Achieving Excellence Together" and ensuring "All students are college, career and life ready" is made possible in Boone County Schools by hiring teachers, support staff and administrators who demonstrate positive, student-centered dispositions — such as the traits listed above. You will not find these traits on a resume or in a job application, but if you ask the right questions during the hiring process, it is possible to learn what motivates an applicant and determine if they have the ability to put students first.

Dispositional hiring has formally been part of Boone County Schools since 2011. Hiring administrators have found it much easier to find the right candidates for the District's students by asking disposition questions, and more importantly, understanding what to listen for in an applicant's responses. Applicants have found the selection process very eye-opening and have realized from the very beginning that the culture of the District is solely focused on putting students first. By hiring highly-qualified applicants with positive, student-centered traits, Boone County Schools will continue to "Achieve Excellence Together."

Empowering parents and building family-school partnerships

Student achievement in school is greatly enhanced when family-school partnerships are strong and parents are empowered to be active participants in their students' learning. In Boone County, family-school partnerships and parent empowerment are grounded in the following core beliefs*:

1. All parents have dreams for their children and want the best for them.
2. All parents have the capacity to support their children's learning.
3. Parents and school staff should be equal partners.
4. The responsibility for building strong family-school partnerships rests primarily with school leaders and staff.

*From *Beyond the Bake Sale* by Henderson, Mapp, Johnson, and Davies

An equitable inclusive education system and strong family-school partnerships are fundamental for realizing high levels of student achievement for all diverse students. For this reason, the District has embarked on a long-term family-school partnership strategy supported by district office leaders and our 24 schools.

In 2015, parent engagement expert Dr. Joe Mazza from the University of Pennsylvania Graduate School of Education worked with Boone County school teams of parents, teachers, and administrators as they "put a stake in the ground" for building family-school partnerships. Teams worked with Dr. Mazza to develop and implement innovative high and low technology strategies for bridging the gap between home and school. Teams designed individual school plans and strategies based on Dr. Mazza's description of the partnership being shared, collaborative, transparent, rich in relationship, anchored in trust, and implemented "with" instead of "to" parents. Teams committed to investing in face-to-face two-way communication as a foundation or "home button" for family-school partnerships to thrive.

Parent empowerment is deeply rooted in the relationships and partnerships schools build with families. Teachers strive to empower parents by including parent engagement strategies when planning for instruction, with the goal of providing knowledge about learning standards and ways for parents to participate in their child's mastery of these standards. In Boone County, parent engagement is not a one-time event. It is an ongoing active component of our strategic plan to provide all students a world class education and ensure that they are college, career, and life ready.

"Schools must meet parents where they are if they are committed to building and maintaining partnerships."
- Dr. Joe Mazza

Bring Your Own Technology

Boone County Schools is pleased to offer students the opportunity to bring their own technology to school as a tool to assist in the 21st century classroom. "BYOT" stands for Bring Your Own Technology. It is the goal for students to use their personal devices for more collaborative, interactive, creative work in the classroom. BYOT is not a requirement; students will continue to have access to school computers and devices.

Boone County began the BYOT initiative in the spring of 2013 which included developing guidelines and expansion/upgrades to the wireless infrastructure. Schools developed procedures requiring students to complete a Digital Driver's License or Digital Passport before allowing them to bring personal devices to school. This requirement covers topics such as online safety, sharing personal information, cyberbullying and more. Many schools have had or are planning to have parent meetings regarding BYOT.

The BYOT wireless network provides Internet access that is filtered. Some of the devices students are currently bringing are smartphones, iPads, tablets, laptops, Chromebooks, e-readers, and Internet capable gaming devices. By the start of the 15-16 school year, all schools in Boone County will be BYOT ready — meaning all schools will have wireless access points in all classrooms and multiple access points in common areas such as libraries, cafeterias, gymnasiums, etc.

The overall goal of any educational initiative should be to support student learning. Decisions should always be made with students in mind. Pedagogy is the driver. Technology is a tool. With this technology tool, we want teachers and students to use their devices to improve learning experiences, network with others, share with others and teach others. In Boone County, we don't want to just use technology but use technology to teach kids to create learning.

Edcamp

Boone County is no stranger to the concept of Edcamp. In fact, Boone County put Edcamp on the map for Kentucky just three short years ago at Edcamp Coop (hosted by the Cooper HS cluster). Edcamp is a method of delivering professional development for school staff that is unstructured, organic, and what most say is the "best PD I've ever been to."

Participants acquire tickets to an Edcamp often without any understanding of the event itself. Primarily because the experience is so hard to describe until you. . .well. . .experience it. You see, with Edcamp there are no rules. There is no structure. There is no plan. The participants create the rules, the structure, and the plan when they arrive. In Boone County, it looks a little like this. . .

A planning team begins working a few months in advance to acquire a location and talk through details of the day such as how many rooms will be used, what technology is available, and how to best advertise for the event. Then, the recruiting begins — primarily through social media and e-mail, however word of mouth is the best avenue to "hook" someone.

On the day of the event, participants gather, chat, network, and make their way to "The Board" to suggest topics for discussion. Teachers and administrators suggest discussion topics such as Creativity in the Classroom, Using the Daily 5 for Reading Instruction, NGSS. . .Now What? Twitter 101, Lego Robotics, and So You Want to be a School Administrator. In all, 25-40 topics are thrown on "The Board" in multiple rounds of sessions lasting just 30 minutes each. The time period is just long enough to collaborate and learn something new but not too long to get in-depth. This is professional development meant to stimulate thinking, spur ideas and change, and generate ideas for school staff.

Participants are often seen in hallways jotting down email addresses, exchanging business cards, and making arrangements for lunch after the event. Edcamp connects us as educators. It allows us to grow and develop our craft. It re-energizes us, rejuvenates our teaching souls, and reignites our passion for our life's work.

Process and Performance Management

Process and Performance Management (PPM):

- "Makes sure we stay on track"
- "ensures we are efficient with all resources to better serve kids"
- "gives us the bigger picture and puts the puzzle pieces together"
- "helps us work efficiently and effectively within our scope of practice"
- "keeps us focused on what's important, leading to student success"

These are comments from participants in Boone County Schools' recent PPM session, relaying the importance and impact of this work. Our Teaching and Learning Committee charged the District with becoming more efficient. As the District continues to do more with less, we knew we had to find better processes in order to maintain a high level of student and operational performance. APQC (American Productivity and Quality Center) helped us do that.

Five work teams were established around critical areas, areas we knew needed overhaul. These focused on processes within position control, fixed assets, maintenance work orders, special needs transportation, and preschool enrollment. Teams were made up of cross-department district personnel, as well as principal representatives. As the end user, the principal's voice was critical in determining if processes would work.

An APQC trainer worked with the teams for four days, providing tools and coaching along the DMAIC model — define, measure, analyze, improve, and control. From swim lanes to SIPOC charts to elevator speeches to business cases, the teams worked through the DMAIC structure to develop new, more efficient processes. Through this first round of projects, preschool enrollment is faster, maintenance work orders are processed more quickly, fixed asset processes are in place, and special needs transportation eliminated deadhead routes. In addition, the position control team has moved to online applications, electronic forms, and enhanced screening processes.

Through a grant from KASA (KY Association for School Administrators) five new teams are working diligently on strategic planning processes, fleet service performance, new construction, enrollment, and next steps with position control. As a result of these two rounds of projects, and the use of DMAIC tools, the District has saved almost $1,000,000, as over 60 District and school leaders have engaged in in-depth PPM work. Beyond cost savings, the PPM work is having a strong positive impact on students. The District's strategic planning process is more intentionally focused on teaching and learning and communication with our community, enrollment is less costly and burdensome on parents, and new construction will more clearly address instructional needs of students.

Matt Rigg, Assistant Director of Human Resources, advises, "Many times, when asked about current processes in a district, people say, 'that's the way things have always been done. ' PPM is a way to get away from that. Instead it focuses district staff on working together to be very clear on processes or, if needed, to reinvent processes."

Next steps for the District include finalizing and communicating current projects to the Board and the larger community. The teams will work to capture their new learning and ensure control of the processes. We know that these principles will transcend all the work in the district, not just those areas we are formally addressing. Our commitment to increasing efficiency and effectiveness will guarantee we have the resources needed to ensure every student is college, career, and life ready.

EdLeader21

Collaboration Rubric
11th/12th Grade

General Description and Suggestions for Use

Assessing the 4Cs – critical thinking, communication, collaboration and creativity – is imperative for any credible 21st century teaching and learning initiative.

The EdLeader21 4Cs rubrics support educators in assessing the 4Cs throughout their systems of teaching and learning. This master set of 4Cs rubrics covers grades 3-4, 7-8 and 11-12 in each of the 4Cs: critical thinking, communication, collaboration and creativity.

These rubrics have been designed with formative assessment of student work in mind, but they can be adapted for many additional uses. These general purpose rubrics are designed to:

- Define the performance areas associated with each of the 4Cs.
- Define important dispositions and habits of mind associated with each of the 4Cs.
- Support balanced, formative assessment of the 4Cs in student work.
- Illustrate a continuum of performance, including exemplary performance, in each category.
- Provide a common vocabulary for stakeholders regarding the 4Cs.
- Be adapted for use in different grade levels and core academic subject areas.
- Help teachers assess performance on complex tasks that enable students to demonstrate mastery of targeted 21st century skills.
- Be customized by educators, specialists, curriculum designers, assessment designers and/or students.

It is important to note that the rubrics are "content agnostic" - - by design, they have not been aligned with any core academic subject areas. Users of the rubrics may choose to adapt them for such use. Also, the rubrics have been published in Word format (for EdLeader21 members only). We encourage our members to customize the rubrics as needed.

For more information on suggested uses for this rubric, including making the connections with core academic subjects, please see the 4Cs Rubrics: Suggestions for Use document.

How does this rubric define collaboration?

EdLeader21, drawing from the P21 definition, starts with the following basic definition of collaboration.

- Collaborate with others
- Demonstrate ability to work effectively and respectfully with diverse teams
- Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
- Assume shared responsibility for collaborative work, and value the individual contributions made by each team member
- Work productively in teams for sustained periods of time to develop high-quality products

What do Levels 1-4 mean in the rubrics?

The rubrics are intended to support student progress in mastering the competency. Levels 1-4 do not contain labels other than numbers, due to the wide variety of terms member schools use to describe proficiency levels in student work. That said, we offer the following descriptions of each level and encourage members to customize the level labels as needed:

- Level 1: describes student performance that requires significant support in reaching basic proficiency.
- Level 2: describes student performance that is approaching proficiency.
- Level 3: describes a "proficient" level of student performance.
- Level 4: describes student performance that is exemplary and exceeds proficiency.

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Performance Area	1	2	3	4
Leadership and Initiative	Frequently misunderstands the scope and relevance of the group's work. Misunderstands the duties and/or roles of team members. Plays a passive role; tends to be an observer rather than taking initiative.	Demonstrates a limited understanding of the scope and relevance of the team's work. Periodically helps clarify responsibilities and/or roles and among team members, but more commonly needs clarification from team members. Fulfills roles and responsibilities with regular prompting and coaching.	Demonstrates a clear understanding of the scope and relevance of the team's work; sufficiently describes the duties and/or roles of all team members. Often helps clarify roles and responsibilities among team members. Fulfills roles and responsibilities with little prompting or coaching.	Shows an impressive ability to understand and perform each role on the team; can discern and verbalize which team member is appropriately matched for each role. Provides leadership to the group in defining the mission and vision for the work. Clearly articulates the team's goals, thoughtfully organizes and divides the work, checks on progress, or provides focus and direction for the project. Shares leadership; knows when to lead and when to follow. Shows a willingness to challenge the mission and vision for the team's work; diplomatically demonstrates a critical stance.
Cooperation	Often contributes to group challenges or confusion by withdrawing participation and/or setting a negative tone in	Periodically, but not consistently, helps resolve conflict or address challenges within the group through discussion and consensus-	Consistently helps resolve conflict or address challenges within the group through discussion and consensus-	Consistently enhances group productivity by making compromises, building consensus among team

Performance Area	1	2	3	4
	words and actions.	building activities.	building activities.	members and setting a positive tone in words and actions; shows understanding of the learning needs of group members.
Flexibility	Rarely displays awareness of the diversity of ideas, opinions, and feelings of group members; tends to work in isolation with a fixed, inflexible perspective.	Displays minimal awareness of the diversity of ideas, opinions, and feelings of group members; sometimes takes other ideas, opinions, and perspectives into consideration and negotiates to reach workable solutions.	Displays sufficient awareness of the diversity of ideas, opinions, and feelings of group members; consistently takes other ideas, opinions, and perspectives into consideration and negotiates to reach workable solutions.	Consistently shows respect and empathy for the ideas, opinions, values, and feelings of other group members.
Responsibility and Productivity	Accepts responsibilities with hesitation. Is unwilling to help others in need. Is rarely well-prepared for group work; consistently submits work late. Performs work that is often not related or is unimportant to the assignment; submits work that is incomplete and does not meet specifications for assigned task. Focuses on his/her work in isolation; frequently ignores or	Shows a willingness to accept responsibilities. Is sometimes hesitant to help others in need. Is sometimes well-prepared for group work; completes some individual action items on time. Products may be lacking in quality; periodically, but not consistently, meets specifications for assigned tasks. Sometimes shows evidence of monitoring individual and team progress toward goals and	Accepts responsibilities with a positive attitude. Assists others as needed; values opinions and skills of all group members. Is often well-prepared for group work; completes all individual action items on time. Submits high-quality products; regularly meets specifications for assigned tasks. Consistently and accurately prioritizes and monitors individual and team progress	Shows excitement about the task at hand; inspires and motivates the group. Frequently produces large quantities of high-quality individual work; connects this work to the work of others in ways that improve the group's overall work. Always uses safe and ethical practices when communicating electronically. Regularly employs a wide range of project management

Performance Area	1	2	3	4
	misunderstands the goals of the group and the roles individual members play in producing quality collaborative work.	prioritizing; periodically makes adjustments based on status of collaborative work.	toward goals, making sufficient corrections and adjustment when needed.	strategies that enhance the group's effectiveness (e.g., creates timelines, identifies or sets goals, prioritizes and allocates tasks, organizes resource-gathering, monitors progress, and keeps group on task).
Use of Tech Tools for Synchronous and Asynchronous Collaboration	Shows a lack of awareness of the current technological tools available for collaboration, is hesitant to use tools selected by the team to complete tasks, and often uses selected tools in a manner that decreases the team's productivity. Is hesitant to collaborate asynchronously using technological tools; uses an inappropriate tone when collaborating with collaborators asynchronously.	Shows minimal awareness of the current technological tools available for collaboration; agrees to use tools selected by the team to complete the tasks. Generally uses selected tools appropriately and responsibly, but sometimes does so in a manner that decreases the team's productivity. Is beginning to demonstrate comfort and confidence in collaborating asynchronously using technological tools. Sometimes uses effective communication strategies to appropriately exchange information and read, interpret, and respond to collaborators' work, but needs coaching at times on how to do so using an appropriate tone.	Shows an awareness of the current technological tools available for collaboration, aids in the team's selection of the most appropriate tools for the tasks, uses selected tools appropriately and responsibly in a manner that enhances the team's productivity. When collaborating asynchronously using technological tools, consistently uses effective communication strategies to appropriately exchange information and read, interpret, and respond to collaborators' work using an appropriate tone.	Shows deep understanding of the current technological tools available for synchronous and asynchronous collaboration by informing the team about options and ways in which various tools can assist with productivity. Supports team members in using the selected tools appropriately and responsively; offers guidance regarding how to increase productivity through effective use of selected tools.

Performance Area	1	2	3	4
Responsiveness	Refrains from offering feedback. Responds to constructive feedback with a negative and/or disengaged attitude. Delivery of or response to constructive criticism limits the group's ability to produce high-quality work (e.g., becomes defensive or provides vague, confusing commentary).	Is beginning to show confidence in offering feedback to team members; feedback is sometimes well-received. Sometimes accepts constructive feedback; shows minimal appreciation for constructive feedback.	Consistently provides constructive feedback; delivers feedback effectively in a manner that is well-received by the recipients. Proactively solicits feedback; consistently accepts and shows appreciation for constructive feedback.	Shows a high comfort level in providing and receiving feedback; displays curiosity about the quality of work and seeks helpful, descriptive feedback from peers, the teacher, and experts involved; and provides and receives feedback in ways that advance the group's ability to produce high-quality work.
Self-Regulation/ Reflection	Rarely engages in self-critique or reflection on collaboration strengths and areas in need of improvement. Shows an inability to describe learning as a result of collaboration experience. (Where was the student's collaboration strong? Where was it weak? How much support did he/she need? What improvements could be made in collaboration next time?)	Sometimes engages in self-critique and reflection on collaboration strengths and areas in need of improvement. Describes learning as a result of collaboration experience, but description lacks clarity. (Where was the student's collaboration strong? Where was it weak? How much support did he/she need? What improvements could be made in collaboration next time?)	Consistently engages in self-critique and reflection on collaboration strengths and areas in need of improvement. Clearly describes learning as a result of collaboration experience. (Where was the student's collaboration strong? Where was it weak? How much support did he/she need? What improvements could be made in collaboration next time?)	Is highly reflective and shows a strong capacity for self-critique.

EdLeader21

Creativity Rubric
11th/12th Grade

General Description and Suggestions for Use

Assessing the 4Cs – critical thinking, communication, collaboration and creativity – is imperative for any credible 21st century teaching and learning initiative.

The EdLeader21 4Cs rubrics support educators in assessing the 4Cs throughout their systems of teaching and learning. This master set of 4Cs rubrics covers grades 3-4, 7-8 and 11-12 in each of the 4Cs: critical thinking, communication, collaboration and creativity.

These rubrics have been designed with formative assessment of student work in mind, but they can be adapted for many additional uses. These general purpose rubrics are designed to:

- Define the performance areas associated with each of the 4Cs.
- Define important dispositions and habits of mind associated with each of the 4Cs.
- Support balanced, formative assessment of the 4Cs in student work.
- Illustrate a continuum of performance, including exemplary performance, in each category.
- Provide a common vocabulary for stakeholders regarding the 4Cs.
- Be adapted for use in different grade levels and core academic subject areas.
- Help teachers assess performance on complex tasks that enable students to demonstrate mastery of targeted 21st century skills.
- Be customized by educators, specialists, curriculum designers, assessment designers and/or students.

It is important to note that the rubrics are "content agnostic" - - by design, they have not been aligned with any core academic subject areas. Users of the rubrics may choose to adapt them for such use. Also, the rubrics have been published in Word format (for EdLeader21 members only). We encourage our members to customize the rubrics as needed.

For more information on suggested uses for this rubric, including making the connections with core academic subjects, please see the 4Cs Rubrics: Suggestions for Use document.

How does this rubric define creativity?

EdLeader21, drawing from the P21 definition, starts with the following basic definition of creativity:

Think Creatively

- Use a wide range of idea creation techniques (such as brainstorming).
- Create new and worthwhile ideas (both incremental and radical concepts).
- Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts.

Work Creatively with Others

- Develop, implement and communicate new ideas to others effectively.
- Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work.
- Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas.

Demonstrate Courage to Explore

- View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small success and frequent mistakes.

Implement Innovations

- Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur.

What do Levels 1-4 mean in the rubrics?

The rubrics are intended to support student progress in mastering the competency. Levels 1-4 do not contain labels other than numbers, due to the wide variety of terms member schools use to describe proficiency levels in student work. That said, we offer the following descriptions of each level and encourage members to customize the level labels as needed:

- Level 1: describes student performance that requires significant support in reaching basic proficiency.
- Level 2: describes student performance that is approaching proficiency.
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- Level 4: describes student performance that is exemplary and exceeds proficiency.

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Performance Area	1	2	3	4
Idea Generation	Shows an inability to find a compelling problem or area of focus that demands their attention, or to grasp the problem, investigation, or challenge provided. Shows an inability to reframe the problem, investigation, or challenge into a metaphor or analogy. Generates few ideas. Offers ideas that are limited in diversity; ideas are often vague and loosely related to the creative challenge at hand. Shows an understanding of the concept of precedents, but fails to research whether ideas offered are new ideas. Participates in limited amounts of brainstorming; raises few open-ended, "what if" questions during the idea generation process.	Somewhat effectively, finds a compelling problem or area of focus that demands their attention. Defines the problem, investigation, or challenge, but explanation lacks clarity and may impact idea generation. Reframes the problem, investigation, or challenge into a metaphor or analogy, but the metaphor or analogy does not provide a sufficiently clear direction regarding how to approach the task. Communicates some new ideas, but the volume is not sufficient to spark a creative process. Asks, "Is my idea really new?" Learning from research about precedents is not sufficient to inform the creative innovation process. Offers ideas that are somewhat diverse and reasonably clear, though they may not be detailed or expanded enough to show a relationship to the creative challenge at hand.	Effectively finds a compelling problem or area of focus that demands their attention. Clearly defines the problem, investigation, or challenge in a manner that builds a framework for idea generation. Reframes the problem, investigation, or challenge into a metaphor or analogy to yield a clear direction regarding how to approach the task (e.g., "a personal music player is jewelry" metaphor sparked creativity in the idea generation phase that led to the iPod). Generates a sufficient volume of new ideas. Asks, "Is my idea really new?" Clearly explains information acquired from researching precedents. Offers ideas that are broad in their diversity; ideas are clearly articulated and closely related to the creative challenge at hand. Regularly asks and answers	Shows an impressive level of depth of understanding of the problem, investigation, or challenge. Shows an impressive level of depth of understanding of the audience for the solution to the problem, including expectations for and constraints on the solution. Takes an original, unique, imaginative approach to idea generation. Demonstrates a complete understanding of all the characteristics of divergent thinking skills, such as: • Fluency—generates a high volume of new ideas in response to open-ended questions or problems; • Flexibility—openness to examining ideas in unexpected ways; • Originality—generating

Performance Area	1	2	3	4
		Sometimes asks and answers "what if" questions, but has difficulty clearly expressing ideas to convince participants to consider new solutions or new criteria for making decisions.	"what if" questions in order to propose new solutions or new criteria for making decisions.	options that are unusual or statistically infrequent; • Elaboration—making ideas richer or more complete; • Metaphorical thinking—using comparison or analogy to make new or unique connections, making the strange familiar, or the familiar strange. Demonstrates a sophisticated understanding of mindfulness; uses all appropriate senses to discover details that might go unnoticed. Finds important, interesting, and relevant information that others did not find from sources that others did not think of using. Asks sophisticated, open-ended questions that lead to the generation of original ideas.

Performance Area	1	2	3	4
Idea Design and Refinement	Makes limited revisions that rarely advance or improve the quality or quantity of ideas. Presents ideas in isolation, without evidence of categorization or prioritization.	Uses organizational techniques such as categorization, prioritization, and classification to present ideas. Is beginning to show evidence of the ability to draw and explain complex connections between ideas. Makes revisions, but has difficulty translating feedback into action items to sufficiently advance and/or improve the quality and quantity of ideas.	Regularly makes sufficient revisions that advance and/or improve the quality and quantity of ideas. Often draws complex connections between ideas using a variety of organizational techniques, such as categorization, prioritization, or classification.	Refines, strengthens, or develops ideas by analyzing possibilities in forward-thinking ways; regularly revises and revisits ideas to improve them (e.g., "tinkering"). Sorts, arranges, categorizes, and prioritizes ideas in ways that turn options into creatively productive outcomes.
Openness and Courage to Explore	Describes and explores ideas in black-and-white terms with little attention given to diverse points of view (or "shades of gray"); displays low tolerance for ambiguity; rarely challenges existing parameters or ideas. Pursues simple questions that lead to a limited understanding of the full context of the question or problem. Represents a single, often inflexible, perspective in pursuing ideas.	Is beginning to develop curiosity, flexibility, and openness to ambiguity in exploring ideas, but needs encouragement and support; sometimes challenges existing parameters or ideas. Describes the larger context surrounding the issue with few errors, but the description may lack clarity. Is beginning to show willingness to challenge and go beyond one's underlying assumptions or beliefs when exploring ideas and	Is curious, flexible, and open to ambiguity in exploring ideas; consistently challenges existing parameters or ideas. Clearly describes the larger context surrounding the issue with few errors. Displays sufficient willingness to challenge and go beyond one's underlying assumptions/beliefs when exploring ideas and solutions. Consistently perseveres in exploring ideas when	Demonstrates high levels of curiosity, imagination, tenacity, and a sense of humor in exploring new concepts and ideas. Displays a sophisticated understanding of and empathy for the context of a problem. Comfortably takes risks, tolerates ambiguity, learns from mistakes, and displays a willingness to grow. Often identifies problems or

Performance Area	1	2	3	4
	Frequently stops exploring ideas when encountering moments of failure or constructive criticism. Has an unclear vision of the end product or performance. Frequently uses a single, inflexible method for producing products.	solutions. Usually perseveres in exploring ideas when encountering moments of failure or constructive criticism. Has a vision of the end product or performance. Is beginning to display resilience when confronted with production challenges or setbacks, but sometimes lacks confidence and ability to take calculated risks and adapt plans.	encountering moments of failure or constructive criticism; shows resilience in situations in which failure is part of the experience. Has a clear vision of the end product or performance. Displays sufficient resilience when confronted with production challenges or setbacks; is confident and able to take calculated risks and adapt plans.	challenges before others are aware of them. Critically examines conventional or authoritarian assertions; challenges one's own assertions or beliefs; willingly expresses unconventional and possibly unpopular ideas.
Work Creatively with Others	Almost always works in isolation; hesitant to communicate ideas and provide feedback to others.	Works collaboratively with others. Is beginning to communicate ideas and feedback to others effectively, but sometimes struggles to make connections between or to build upon others' ideas to generate new and unique insights.	Works collaboratively with others. Communicates ideas and feedback to others effectively; often makes connections between and builds upon others' ideas to generate new and unique insights.	Student initiates collaborative, creative activities or challenges; frequently acts as an "idea leader" in activities. Displays a sophisticated level of openness and responsiveness to new and diverse perspectives; incorporates group input and feedback into the work.

Performance Area	1	2	3	4
Creative Production and Innovation	Proposes a product that has a vague or incomplete connection to the task. Product is not considered to be valuable or unique by the broad, target audience and is not considered by experts to be creative. Shows an inability to reflect on the quality of work.	Somewhat effectively, shapes original ideas into a product in an effort to meet specifications. Presents a product that is considered to be somewhat valuable and unique by the broad, target audience and is considered by experts to be somewhat creative. Reflects with minimal accuracy on the quality of work.	Effectively shapes original ideas into a product in an effort to meet specifications. Presents a product that is considered to be valuable and unique by the broad, target audience and is considered by experts to be creative. Reflects with accuracy on the quality of work.	Always exhibits diligence and ethical behavior in producing creative works. Productively uses an impressive set of divergent thinking strategies to generate ideas. Uses convergent thinking skills and/or design thinking strategies as appropriate to develop creative ideas into tangible solutions or contributions. Products or performances include evidence of spontaneous fluency, flexibility, originality, or elaboration. Demonstrates a high degree of adaptability in the production of creative products or performances (e.g., making do with what is at hand to reach goals.)

Performance Area	1	2	3	4
Self-Regulation/ Reflection	Rarely analyzes and questions one's own creativity and innovation with accuracy. (Is the student curious, flexible, and open to ambiguity in exploring ideas? Does the student assess the quality of his/her ideas? Show perseverance? Continuously seek clarity and understanding? Dedicate enough time and effort to the creative process? Reflect on the amount of support that he/she needs during the creative process?)	Sometimes analyzes and questions one's own creativity and innovation with accuracy. (Is the student curious, flexible and open to ambiguity in exploring ideas? Does the student assess the quality of his/her ideas? Show perseverance? Continuously seek clarity and understanding? Dedicate enough time and effort to the creative process? Reflect on the amount of support that he/she needs during the creative process?)	Often analyzes and questions one's own creativity and innovation with accuracy. (Is the student curious, flexible and open to ambiguity in exploring ideas? Does the student assess the quality of his/her ideas? Show perseverance? Continuously seek clarity and understanding? Dedicate enough time and effort to the creative process? Reflect on the amount of support that he/she needs during the creative process?)	Is highly reflective and shows a strong capacity for self-critique.

EdLeader21

Critical Thinking Rubric

11th/12th Grade

General Description and Suggestions for Use

Assessing the 4Cs – critical thinking, communication, collaboration and creativity – is imperative for any credible 21st century teaching and learning initiative.

The EdLeader21 4Cs rubrics support educators in assessing the 4Cs throughout their systems of teaching and learning. This master set of 4Cs rubrics covers grades 3-4, 7-8 and 11-12 in each of the 4Cs: critical thinking, communication, collaboration and creativity.

These rubrics have been designed with formative assessment of student work in mind, but they can be adapted for many additional uses. These general purpose rubrics are designed to:

- Define the performance areas associated with each of the 4Cs.
- Define important dispositions and habits of mind associated with each of the 4Cs.
- Support balanced, formative assessment of the 4Cs in student work.
- Illustrate a continuum of performance, including exemplary performance, in each category.
- Provide a common vocabulary for stakeholders regarding the 4Cs.
- Be adapted for use in different grade levels and core academic subject areas.
- Help teachers assess performance on complex tasks that enable students to demonstrate mastery of targeted 21st century skills.
- Be customized by educators, specialists, curriculum designers, assessment designers and/or students.

It is important to note that the rubrics are "content agnostic" - - by design, they have not been aligned with any core academic subject areas. Users of the rubrics may choose to adapt them for such use. Also, the rubrics have been published in Word format (for EdLeader21 members only). We encourage our members to customize the rubrics as needed.

For more information on suggested uses for this rubric, including making the connections with core academic subjects, please see the 4Cs Rubrics: Suggestions for Use document.

How does this rubric define critical thinking?

EdLeader21, drawing from the P21 definition, starts with the following basic definition of critical thinking:

Critical thinkers:

- Collect, assess and analyze relevant information.
- Reason effectively.
- Use systems thinking.
- Make sound judgments and decisions.
- Identify, define and solve authentic problems and essential questions.
- Reflect critically on learning experiences, processes and solutions.

What do Levels 1-4 mean in the rubrics?

The rubrics are intended to support student progress in mastering the competency. Levels 1-4 do not contain labels other than numbers, due to the wide variety of terms member schools use to describe proficiency levels in student work. That said, we offer the following descriptions of each level and encourage members to customize the level labels as needed:

- Level 1: describes student performance that requires significant support in reaching basic proficiency.
- Level 2: describes student performance that is approaching proficiency.
- Level 3: describes a "proficient" level of student performance.
- Level 4: describes student performance that is exemplary and exceeds proficiency.

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Performance Area	1	2	3	4
Information and Discovery	Shows an inability to grasp the problem, investigation, or challenge; rarely seeks clarity and understanding. Formulates questions that are unclear and/or easily answered and do not provide a foundation for inquiry. Attempts to select information to answer inquiry questions, but is unable to find the right information.	Defines the problem, investigation, or challenge, but explanation lacks clarity. Seeks clarity and understanding at times, but sometimes moves forward without sufficient understanding. Is beginning to formulate clear inquiry questions, but questions are limited and provide a framework for limited inquiry. Is beginning to select information, but needs assistance to find information that is sufficient to answer the scope of inquiry questions.	Clearly defines the problem, investigation, or challenge; continuously seeks clarity and understanding. Identifies inquiry questions clearly and precisely; engages in an open-ended thinking process to develop an initial set of questions related to the problem, investigation, or challenge; refines the initial set of questions; and identifies a key question or prioritized set of questions on which to focus. Questions provide a solid foundation for inquiry. Selects information that is sufficient in terms of its quantity, diversity, and relevance to inquiry questions.	Shows an impressive level of depth of understanding of the problem, investigation, or challenge. Shows an impressive level of depth of understanding of the audience for the solution to the problem, including expectations for and constraints on the solution. Generates thought-provoking inquiry questions. Carefully phrases questions in an effort to influence the depth, quality, and value of the information they will obtain through investigation. The quality of questions allows for in-depth inquiry.
Interpretation and Analysis	Identifies criteria and creates categories for information that attend to trivial aspects of the items, or items that cannot be accurately compared or classified. Makes significant errors in identifying similarities, differences and categorization of	Is beginning to create simple criteria to compare and classify information; makes limited comparisons that are meaningful. Is beginning to evaluate the accuracy and relevance of information; makes limited	Compares and classifies information accurately; almost always identifies characteristics that create meaningful comparisons. Evaluates the accuracy and relevance of information and	Expertly and appropriately selects, categorizes, and classifies a wide variety of information (e.g., significant experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, and/or criteria)

Performance Area	1	2	3	4
	items. Detects arguments rarely; inaccurately evaluates the strength of claims. Ignores explicit and implicit points of disagreement; rarely identifies evidence that supports or undermines a particular claim.	comments regarding the strengths of arguments.	the strengths of arguments, with no significant errors.	related to the topic. Provides a well-developed examination of the evidence and sources of evidence; always questions the accuracy, precision, relevance, and completeness of information. Accurately detects and evaluates the strength of arguments by raising questions or objections, or pointing out fallacies. Often identifies the extent to which possible additional information might strengthen or weaken an argument.
Reasoning	Is unable to show understanding of generalizations related to the problem, investigation, or challenge by articulating examples; makes erroneous generalizations. Presents conclusions regarding how to solve the problem, meet the challenge, answer the question, etc., that illustrate serious misconceptions.	Is beginning to show understanding of generalizations related to the problem, investigation, or challenge by articulating examples, but is unable to create his/her own accurate generalizations. Presents conclusions regarding how to solve the problem, meet the challenge, answer the question, etc., that illustrate	Offers generalizations that relate in a significant way to the problem, investigation, or challenge. Presents logical conclusions regarding how to solve the problem, meet the challenge, answer the question, etc. that illustrate substantial understanding.	Demonstrates complete understanding and appropriate use of inductive and deductive reasoning as appropriate to the situation: • Inductive—Draws conclusions that reflect clear and logical links between the information or observations and the interpretations made

Performance Area	1	2	3	4
	Provides explanations for conclusions drawn that are unclear and impossible to follow; fails to provide evidence for conclusions drawn. Explanation lacks a perspective on why the proposed course of action is morally the best decision.	partial understanding. Provides explanations that lack clarity, citing partial evidence for conclusions drawn. Explanation includes a perspective on why the proposed course of action is morally the best decision, but lacks clarity.	Provides explanations that are generally clear, citing sufficient evidence for conclusions drawn. Demonstrates ethical reasoning and judgment by clearly sharing perspectives on why the proposed course of action is morally the best decision.	from them. • Deductive—Demonstrates an understanding of the generalizations or principles that is not only accurate but provides a unique perspective on the topic. Draws logical conclusions that are not immediately obvious; explains the rationale for conclusions through sophisticated and often original uses of inductive and/or deductive reasoning.
Problem Solving/Solution Finding	Describes systems inaccurately or in overly simplified, obvious terms that inhibit understanding of the problem or task. Demonstrates limited understanding of how and when to use tools of systems thinking to organize or make connections between pieces of information. Often presents solutions,	Describes how parts of a whole interact with each other to produce overall outcomes in systems, and how systems effectively interact with each other, but explanation indicates a minimal understanding. Is learning how to identify plausible solutions to the problem, answers to the question, or approaches to meet the	Accurately and clearly analyzes and describes how parts of a whole interact with each other to produce overall outcomes in complex systems, and how systems effectively interact with each other. Identifies a sufficient number of plausible solutions to the problem, answers to the question, or approaches to meet	Applies tools of systems thinking (e.g., iceberg, ladder of inference, systems archetypes, reinforcing/balancing feedback loops, systems archetypes, or behavior-over-time graphs) to understand complexity, interdependence, change, and leverage that are appropriate for the task.

Performance Area	1	2	3	4
	answers, or approaches that do not address the problem, question, or challenge directly. Uses illogical methods for determining relative value of alternatives; solutions or approaches are presented with little to no consideration of their strengths and weaknesses. Identifies few or no criteria that are relevant to the selection of a solution or approach.	challenge, but provides limited options that show minimal understanding. Analyzes the relative effectiveness of proposed solutions or approaches, but the process is not sufficiently thorough and shows minimal insight. Uses criteria to eliminate ineffective solutions or approaches, but criteria are a little vague and produce some options that are not plausible.	the challenge. Analyzes, with precision and accuracy, the relative effectiveness of proposed solutions or approaches. Uses relevant criteria to eliminate ineffective solutions or approaches and select those that are plausible.	Almost always identifies a variety of unique solutions to the problem, often by using both convergent and divergent thinking: • Convergent—follows a clear line of logical steps to select a specific option or options that will solve the problem. • Divergent—generates multiple options for solving a problem. Clearly identifies criteria by which solutions will be assessed. Provides a thorough, fully developed assessment of each solution based upon the criteria. Shows an impressive level of depth of understanding by comparing and contrasting the alternatives to provide unique insights into the problem and solution. Engages in effective, thorough trials of a wide

Performance Area	1	2	3	4
				variety of proposed solutions to develop and demonstrate an in-depth understanding of the problem and ways to address it.
Constructing Arguments	Provides simplistic arguments with scant descriptions of claims to show reasoning. Arguments are based on evidence that is inadequate or unstated. Presents arguments with little or no explanation or justification for claims.	Provides a claim that may be stated unclearly; is beginning to explain the reasoning for claims. Descriptions are somewhat convincing, but lack clarity. Cites evidence to support argument, but provides an insufficient quantity to provide a strong justification. Provides a minimal treatment of some of the evidence related to the claim; acknowledgement of counter arguments is present, but not clear enough to support the claim.	Provides a claim that clearly articulates an opinion; clearly explains the reasoning for claims. Cites a sufficient quantity of relevant evidence to support most claims. Presents a clear and sufficient treatment of most available evidence relating to the argument; clearly and convincingly addresses counter arguments.	Through presentation of important details, facts, and concepts, clearly expresses results of one's reasoning through cogent arguments that are well-supported by evidence. Considers what evidence is missing and how it should affect an evaluation of the claim. Provides careful and reasoned qualifications or restrictions for the claim in such a way that the argument provides a unique perspective on the claim.

Performance Area	1	2	3	4
Self-Regulation/ Reflection	Often identifies errors in the process, and how to fix them, incorrectly. Rarely analyzes and questions one's own thinking, reasoning, and critical thinking dispositions with accuracy. (Does the student openly explore alternative points of view? Show open-mindedness and flexibility? Continuously seek clarity and understanding? Use precision and thoroughness? Dedicate enough time and effort to thinking? Assess whether the quality of his/her thinking is improving over time? Reflect on the amount of support that he/she needs during the critical thinking process?) Displays significant biases that prevent an objective perspective. Rarely questions and/or evaluates one's own reasoning and cognitive skills; makes regular errors in reviewing performance.	Is beginning to show the ability to identify errors in the process, but needs support in correcting the problem or identifying a new course of action. Sometimes analyzes and questions one's own thinking, reasoning, and critical thinking dispositions with accuracy. (Does the student openly explore alternative points of view? Show open-mindedness and flexibility? Continuously seek clarity and understanding? Use precision and thoroughness? Dedicate enough time and effort to thinking? Assess whether the quality of his/her thinking is improving over time? Reflect on the amount of support that he/she needs during the critical thinking process?) Sometimes identifies factors that affect one's objectivity or rationality. Is beginning to review one's own performance, but review shows errors in self-reflection.	Frequently identifies and corrects errors in the process. Often analyzes and questions one's own thinking, reasoning, and critical thinking dispositions with accuracy. (Does the student openly explore alternative points of view? Show open-mindedness and flexibility? Continuously seek clarity and understanding? Use precision and thoroughness? Dedicate enough time and effort to thinking? Assess whether the quality of his/her thinking is improving over time? Reflect about the amount of support that he/she needs during the critical thinking process?) Often identifies factors that affect one's objectivity or rationality. Rarely makes significant errors in reviewing one's own performance.	Nearly always accurately identifies all errors in the information or process. Always analyzes and evaluates one's own cognitive skills with a view toward questioning and/or validating one's reasoning and results. Accurately judges the extent to which one's thinking is influenced by deficiencies in knowledge, stereotypes, prejudices, emotions, or any other factors that constrain one's objectivity or rationality. Work is always unbiased, fair-minded, thorough, and objective. Designs reasonable procedures to remedy or correct, if possible, any mistakes and their causes.

Performance Area	1	2	3	4

EdLeader21

Communication Rubric
11th/12th Grade

General Description and Suggestions for Use

Assessing the 4Cs – critical thinking, communication, collaboration and creativity – is imperative for any credible 21st century teaching and learning initiative.

The EdLeader21 4Cs rubrics support educators in assessing the 4Cs throughout their systems of teaching and learning. This master set of 4Cs rubrics covers grades 3-4, 7-8 and 11-12 in each of the 4Cs: critical thinking, communication, collaboration and creativity.

These rubrics have been designed with formative assessment of student work in mind, but they can be adapted for many additional uses. These general purpose rubrics are designed to:

- Define the performance areas associated with each of the 4Cs.
- Define important dispositions and habits of mind associated with each of the 4Cs.
- Support balanced, formative assessment of the 4Cs in student work.
- Illustrate a continuum of performance, including exemplary performance, in each category.
- Provide a common vocabulary for stakeholders regarding the 4Cs.
- Be adapted for use in different grade levels and core academic subject areas.
- Help teachers assess performance on complex tasks that enable students to demonstrate mastery of targeted 21st century skills.
- Be customized by educators, specialists, curriculum designers, assessment designers and/or students.

It is important to note that the rubrics are "content agnostic" - - by design, they have not been aligned with any core academic subject areas. Users of the rubrics may choose to adapt them for such use. Also, the rubrics have been published in Word format (for EdLeader21 members only). We encourage our members to customize the rubrics as needed.

For more information on suggested uses for this rubric, including making the connections with core academic subjects, please see the 4Cs Rubrics: Suggestions for Use document.

How does this rubric define communication?

EdLeader21, drawing from the P21 definition, starts with the following basic definition of communication:

Communicate Clearly

- Use effective interpersonal skills during conversations and discussion to build positive relationships with others and promote collaborative learning.
- Communicate interactively and effectively to support individual learning and contribute to the learning of others using a range of contemporary tools, transmissions and processes.
- Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions. Communicate ideas through the creation of authentic products using a combination of words, data, and visual representations to inform, persuade and entertain others.
- Communicate effectively in diverse environments (including multi-lingual). Show cultural understanding and global awareness when engaging with learners of other cultures.
- Deliver effective oral presentations to communicate the results of inquiry. Field questions to demonstrate conceptual understanding and knowledge, along with details about the inquiry process.

**Written communication is embedded in the Common Core Writing Standards.*

What do Levels 1-4 mean in the rubrics?

The rubrics are intended to support student progress in mastering the competency. Levels 1-4 do not contain labels other than numbers, due to the wide variety of terms member schools use to describe proficiency levels in student work. That said, we offer the following descriptions of each level and encourage members to customize the level labels as needed:

- Level 1: describes student performance that requires significant support in reaching basic proficiency.
- Level 2: describes student performance that is approaching proficiency.
- Level 3: describes a "proficient" level of student performance.
- Level 4: describes student performance that is exemplary and exceeds proficiency.

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Connection to the Common Core Standards

The Communication 4Cs Rubric closely connects to the Common Core English Language Arts Speaking and Listening Standards. An important focus of the Common Core Listening and Speaking Standards is academic discussion that takes place as students collaborate to answer questions, build understanding, and solve problems. Listening is an important component of academic discussions. The College and Career Readiness (CCR) Anchor Standards also outline rigorous expectations for students regarding the delivery of oral presentations. The following is a list of three Communication 4Cs Rubric categories and the College and Career Readiness (CCR) Anchor Standards that link to each category:

Engaging in Conversations and Discussions Row

- CCR1: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

Listening Row

- 3: Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

Delivering Oral Presentations Row

- 4: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
- 5: Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
- 6: Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

Performance Area	1	2	3	4
Engaging in Conversations and Discussions	Recognizes the importance of building positive relationships with collaborators, but rarely uses interpersonal skills that are necessary for effective communication. Is hesitant to respond to questions during conversations. When attempting to clarify, verify, or challenge ideas, often comes across as argumentative or defensive; rarely participates relevantly in conversations; Rarely delivers feedback in a manner that makes the recipients feel safe. Shows understanding of the importance of being positive when communicating, but often shows negativity and is hesitant to let collaborators know that their opinions and ideas are valued.	Often uses effective interpersonal skills during conversations to build positive relationships with collaborators. Responds to questions; is beginning to propel conversations by posing further questions. Is growing in ability to clarify, verify, or challenge ideas and conclusions with diplomacy, rather than coming across as argumentative or defensive; sometimes participates relevantly in conversations. Sometimes delivers feedback in a manner that makes the recipients feel safe. Communicates positively, and is growing in ability to express that collaborators' opinions and ideas are valued.	Consistently uses effective interpersonal skills during conversations to build positive relationships with collaborators. Propels conversations by posing and responding to questions; clarifies, verifies, or challenges ideas and conclusions with diplomacy; and consistently participates relevantly in conversations; Consistently delivers feedback in a manner that makes the recipients feel safe. Consistently communicates positively and indicates that collaborators' opinions and ideas are valued.	Shows a deep and genuine concern for the opinions and ideas of the people involved in the conversation. Shows an ability to have in-depth and meaningful conversations. Shows a deep understanding of the interpersonal dynamics of the conversation and adjusts to encourage the full, productive participation of all parties.

Performance Area	1	2	3	4
Using 21st Century Communication Tools	Develops unclear messages when communicating using 21st century tools. The sender and receiver rarely understand the same information as a result of the communication. Uses a format, level of formality, and style that is inappropriate based on the communication purpose and channel. Is often unclear and inaccurate in communication, but is growing in ability to become more concise and convey ideas more effectively. Rarely assesses the effectiveness and impact of communications; is unclear about whether the audience has understood the message.	Develops a somewhat clear message when communicating using 21st century tools. Usually crafts messages so that both the sender and receiver understand the same information as a result of the communication. Uses a format, level of formality, and style that is somewhat appropriate based on the communication purpose and channel. Is somewhat clear and accurate, but could become more concise to convey ideas more effectively. Sometimes assesses the effectiveness and impact of communications; is beginning to know whether the audience has understood the message.	Develops a clear message when communicating using 21st century tools (i.e., telecommunications and online resources for asynchronous and synchronous communication). Consistently, both the sender and the receiver understand the same information as a result of the communication. Uses a format, level of formality, and style that is appropriate based on the communication purpose and channel. Is clear, concise, and accurate and conveys ideas effectively. Consistently assesses the effectiveness and impact of communications; knows whether the audience has understood the message.	Consistently uses a respectful, friendly tone when communicating using 21st century tools.

Performance Area	1	2	3	4
Listening	Is building a foundation to listen effectively; is beginning to show the ability to accurately decipher knowledge communicated by the speaker, but often becomes confused about the message. Rarely asks questions to gain clarification on the intended message; is building a foundation to do so, with confidence. Listens inattentively, demonstrates a lack of interest in the speaker's message, and appears to be disengaged. Rarely honors established norms related to listening (e.g., "shares the air").	Listens somewhat effectively. When listening, deciphers knowledge communicated by the speaker, and is growing in the ability to decipher the speaker's values, attitudes, and intentions. Sometimes asks questions to gain clarification on the intended message. Listens somewhat actively and attentively; demonstrates minor interest in the speaker's message; and is beginning to provide verbal or nonverbal feedback to indicate that the message was received to show understanding, but can sometimes appear to be disengaged. Sometimes honors established norms related to listening (e.g., "shares the air").	Listens effectively. When listening, deciphers meaning, including knowledge communicated by the speaker and the speaker's values, attitudes, and intentions. Consistently asks questions to gain clarification on the intended message. Listens actively and attentively, demonstrates interest in the speaker's message, and provides verbal or nonverbal feedback to indicate that the message was received; shows understanding. Consistently honors established norms related to listening (e.g., "shares the air").	Is skilled at asking questions to show that active listening is in progress; encourages others to do much of the talking.
Communicating in Diverse Environments	Is building a foundation to communicate effectively in diverse environments (including multi-lingual), but regular use of colloquialisms, jargon, and slang make it difficult for collaborators	Is beginning to communicate effectively in diverse environments (including multi-lingual). However, the student's periodic use of colloquialisms, jargon, or slang makes it difficult	Communicates effectively in diverse environments (including multi-lingual); refrains from the use of colloquialisms, jargon, or slang to avoid communication	Shows strong cultural awareness when communicating in diverse environments; uses empathy to determine how learners from other cultures would

Performance Area	1	2	3	4
	to understand what the student is trying to communicate. Shows a lack of cultural understanding when engaging with learners from other cultures; appears awkward when encountering differences in communication.	for some learners from other cultures to understand what the student is trying to communicate. Shows limited cultural understanding when engaging with learners from other cultures; respects differences in communication.	barriers. Shows cultural understanding and when engaging with learners from other cultures; respects differences in communication.	like to be treated. Checks assumptions about learners from other cultures; shows consideration of other peoples' world views, frames of reference, and beliefs; and asks for feedback on communication skills.
Delivering Oral Presentations	When delivering oral presentations, is able to accurately answer few questions to demonstrate conceptual understanding and knowledge; shows a lack of confidence when fielding questions during presentations. Information, findings, and supporting evidence presented are unclear to the viewer/listener. Presentation lacks a clear perspective and fails to address alternative or opposing perspectives. Organization, substance, and style are rarely appropriate to the context, purpose, and audience. Shows a lack of awareness of the audience's	When delivering oral presentations, is able to accurately answer some questions to demonstrate conceptual understanding and knowledge; is beginning to show confidence when fielding questions during presentations. Presents information, findings, and supporting evidence somewhat clearly; conveys a somewhat distinct perspective; somewhat clearly addresses alternative or opposing perspectives. Organization, substance, and style are sometimes appropriate to the context, purpose, and audience. Shows limited awareness of the audience's needs, interests,	When delivering oral presentations, accurately and confidently fields questions to demonstrate conceptual understanding and knowledge. Presents information, findings, and supporting evidence clearly; conveys a distinct perspective; and clearly addresses alternative or opposing perspectives. Organization, substance, and style are consistently appropriate to the context, purpose, and audience. Shows awareness of the audience's needs, interests, expertise, ages, and cultural backgrounds. Use of digital media enhances	Discusses presentation topic with passion and excitement; generates a high level of interest from the audience.

Performance Area	1	2	3	4
	needs, interests, expertise, ages, and cultural backgrounds. Use of digital media detracts from the presentation and diminishes audience understanding and interest; format is inappropriate for the data represented. Substantially strays from the time allocation for the presentation. Use of body language to enhance communication is ineffective and distracting. Dresses inappropriately for the occasion.	expertise, ages, and cultural backgrounds. Use of digital media somewhat enhances audience understanding and adds interest; format is somewhat appropriate for the data represented. Nearly adheres to the time allocation for the presentation. Use of body language to enhance communication is somewhat effective, but may be distracting at times. Dresses somewhat appropriately for the occasion.	audience understanding and adds interest; format is appropriate for the data represented. Adheres to the time allocation for the presentation. Effectively uses body language to enhance communication. Dresses very appropriately for the occasion.	
Self-Regulation/ Reflection	Rarely reflects on the level of success of communications and reflections are generally inaccurate. (Where was his/her communication strong? Where was it weak? How much support did he/she need? How did the quality of communication impact his/her ability to accomplish tasks and meet goals? What improvements	Sometimes reflects on the level of success of communications, but reflections are not always accurate. (Where was his/her communication strong? Where was it weak? How much support did he/she need? How did the quality of communication impact his/her ability to accomplish tasks and meet goals? What improvements could be made in	Consistently reflects accurately on the level of success of communications. (Where was his/her communication strong? Where was it weak? How much support did he/she need? How did the quality of communication impact his/her ability to accomplish tasks and meet goals? What improvements could be made in	Accurately identifies underlying causes that influence communication challenges or breakdowns; consistently identifies reasonable action items to improve communication.

Performance Area	1	2	3	4
	could be made in communication next time?)	communication next time?)	communication next time?)	

About PISA

"What is important for citizens to know and be able to do?" That is the question that underlies the triennial survey of 15-year-old students around the world known as the Programme for International Student Assessment (PISA). PISA assesses the extent to which students near the end of compulsory education have acquired key knowledge and skills that are essential for full participation in modern societies.

Since 2000, PISA has been testing students worldwide in the key subjects: reading, mathematics and science. The assessment also collects information on students' backgrounds and on how their schools are managed in an effort to identify the factors that influence student performance.

PISA also regularly introduces new tests to assess students' skills in other areas relevant to modern life, such as creative problem solving and financial literacy (tested for the first time in 2012) and collaborative problem solving (testing will begin in 2015).

A new project called PISA for Development is underway. It aims to adapt the PISA instruments to make them even more relevant for a broader range of contexts, particularly those of developing countries. These instruments will be developed and tested in a small number of countries over the next three years. To find out more go to:

www.oecd.org/pisa/pisafordevelopment

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Italy
Japan
Jordan
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Korea
Kosovo
Kyrgyz Republic
Latvia
Lebanon
Liechtenstein
Lithuania
Luxembourg
Macedonia (Former Yugoslav Republic of)
Malaysia
Malta
Mauritius
Mexico
Moldova
Montenegro
Netherlands
New Zealand
Norway
Panama
Peru
Poland
Portugal
Qatar
Romania
Russian Federation
Serbia
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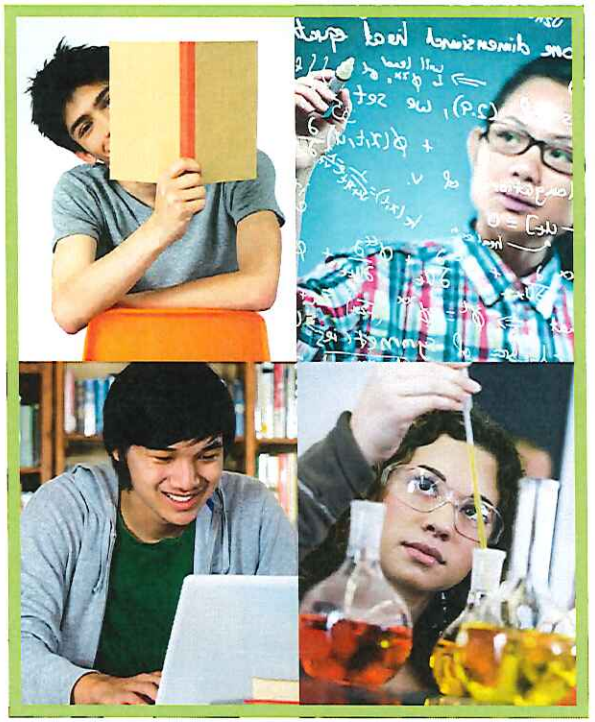
OECD member countries

For more information please contact:
edu.pisa@oecd.org.

OECD

Programme for International Student Assessment (PISA)

The OECD assessment of 15-year-olds in key competencies to help improve quality, equity and efficiency in education systems



What makes PISA unique ?

PISA results reveal what is possible in education by showing what students in the highest-performing and most rapidly improving education systems can do. It is unique in the way it looks at:

Public policy issues: PISA helps stakeholders assess how well schools are equipping today's youth for adult life, whether education systems are fair, and whether some schools and teaching methods are more effective than others.

Literacy: Rather than examine mastery of specific school curricula, PISA looks at students' ability to apply what they learn in school to real-life situations.

Lifelong learning: PISA not only looks at student performance but also finds out about students' potential for lifelong learning by asking them about their motivation, their self-beliefs and their learning strategies.

Performance over time: Countries and economies participating in successive PISA cycles can compare the performance of their students over time and assess the impact of education policy decisions.

Key facts about PISA 2012

The content: The PISA 2012 survey focused on mathematics, with reading, science and problem-solving as minor areas of assessment. For the first time, PISA 2012 also included an assessment of the financial literacy of young people, which was optional for countries.

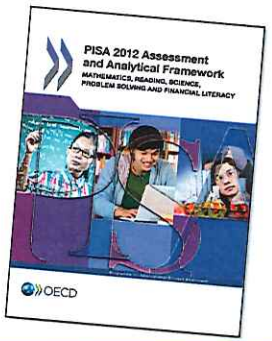
The students: Around 510 000 students completed the assessment in 2012, representing about 28 million 15-year-olds in the schools of the 65 participating countries and economies.

The assessment: Paper-based tests were used, lasting two hours for each student. In some countries an extra 40 minutes were devoted to the computer-based assessment of mathematics, reading and problem solving.

Questions were a mixture of multiple choice and those requiring students to construct their own responses. Try out some questions here: www.oecd.org/pisa/test

Students answered a questionnaire that sought information about themselves, their homes and their school and learning experiences. School principals were given a questionnaire that covered the school system and the learning environment.

In some countries parents answered a questionnaire to provide information on their perceptions of and involvement in their child's school, their support for learning at home and their child's career expectations.



PISA results

Policy makers use PISA results to gauge the knowledge and skills of students in their own countries in comparison with those in other countries, set policy targets against measurable goals achieved by other education systems, and learn from policies and practices applied elsewhere. Among many other results, PISA has found that:

- Among low-income economies, the amount spent on education is an important factor in promoting performance.
- Successful school systems in high-income economies tend to prioritise the quality of teachers over the size of classes.
- PISA shows that equity concerns do not need to be sacrificed to achieve at high levels: many school systems combine high levels of performance with above average social equity.
- Improvements in performance are possible, whatever the starting point for students, schools and education systems. Improvements are not, however, inevitable and require the concerted efforts of policy makers, teachers, parents, students and society at large.
- Grade repetition is an expensive policy that is not associated with performance improvements at the system level. Socio-economic disadvantage is associated with grade repetition on top and beyond its effect on performance.

Joining PISA

The next assessment countries can join will be in 2018. The deadline for joining is the end of 2014.

Countries can express their interest by sending a message to **edu.pisa@oecd.org.**

Find out more at **www.oecd.org/pisa/.**

Meeting Sign In 10/28/15

Brown, Andrew

Cockerll, Mary

Dawson, Ronda

Gels, Jerome

Hibbett, Joseph

Johnson,Benjamin

Kellinghaus, Ryan

Mulla, Kahil

Mullins, Alan

Osterbur, Melissa

Richards, Scott

Roehrich, Jesse

Rolls, Angela

Shearer,Matthew

Smith, Darin

Teegarden, Troy

Walters, Lesley

Frommeyer, Michelle

10/28/15

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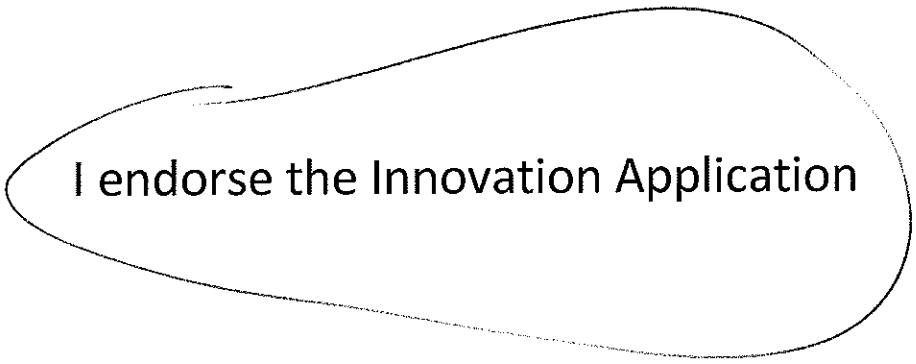

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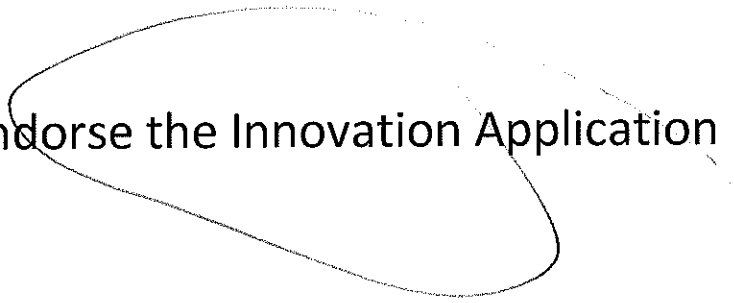

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