



Science Assessment System Through Course Task

Just Like Me

Grade Level:

1

Phenomena:

Similarities in Functions of Body Structures

Science & Engineering Practices:

Analyzing and Interpreting Data
Engaging in Argument from Evidence

Crosscutting Concepts:

Patterns

Designed and revised by Kentucky Department of Education staff
in collaboration with teachers from Kentucky schools and districts.



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Preparing to implement Through Course Tasks in the Classroom

What is a TCT?

- TCTs are 3-dimensional tasks specifically designed to get evidence of student competency in two dimensions, Science and Engineering Processes (SEPs) and Crosscutting Concepts (CCC), untethered from Performance Expectations (PEs)/standards. Tasks are sense-making experiences.
- Tasks are to be used formatively. The goal is for both students and teachers to understand areas of strength and improvement for the SEP(s) and CCC assessed within the task.

How do I facilitate a Through Course Task (TCT)?

- TCT facilitation is a collaborative process in which teacher teams calibrate understanding of the expectations of the task and refine strategies to be used during task facilitation.

Before the task:

1. Complete the TCT as a learner – compare understanding of task through the lens of success criteria (identified in the task) in order to understand expectations.
Success criteria include:
 - What is this task designed to get evidence of?
 - What is the task asking the students to do?
 - What might a student response look like?
2. Identify the phenomenon within the task. Consult resources to assure teacher teams have a deep understanding of associated science concepts.
3. Collaborate to generate, review and refine feedback questions during facilitation.
4. Identify potential “trouble spots” and plan for possible misconceptions.

During the task:

5. Collect defensible evidence of each student’s competencies in 3-dimensional sense-making for the task.
6. Ask appropriate feedback questions to support student access and engagement with the task in order to elicit accurate evidence of student capacities.

After the task:

7. Reflect on the task as a collaborative team.
8. Review student work samples to identify areas of strength and areas of need.
9. Determine/plan next steps to move 3-D sense making forward through the strengthening of the use of SEPs and CCCs.

Using the materials included in this packet:

- **Task Annotation:**
 - The task annotation is a teacher guide for using the task in the classroom. Additionally, the annotation gives insight into the thinking of developers and the task overall.

- Each task has science and engineering practices, disciplinary core ideas, and crosscutting concepts designated with both color and text style:
 - **Science and Engineering Practices**
 - *Disciplinary Core Ideas*
 - Crosscutting Concepts
- **Student Task:** The materials to be used by students to complete the TCT.

Just Like Me Task Annotation

After **making observations** to identify similarities and differences of animal and human body structures and functions, **state a claim** as to which animal has structures (3) that function most like those of humans using patterns found in the data as evidence.

Phenomenon within the task

Humans and other animals have external body structures that function in similar ways.

How the phenomenon relates to DCI

At Grade 1 students are encouraged to think about how function is directly related to structure. They begin by noticing that organisms have external parts and that different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place and seek, find and take in food, water and air (LS1A - Grade 1). As student progress through the grade bands they use this foundational information to help them make sense of macroscopic and microscopic cellular level phenomenon.

A progression of this DCI from grade K-12:

	K-2	3-5	6-8	9-12
LS1.A Structure and function	All organisms have external parts that they use to perform daily functions.	Organisms have both internal and external macroscopic structures that allow for growth, survival, behavior, and reproduction.	All living things are made up of cells. In organisms, cells work together to form tissues and organs that are specialized for particular body functions.	Systems of specialized cells within organisms help perform essential functions of life. Any one system in an organism is made up of numerous parts. Feedback mechanisms maintain an organism's internal conditions within certain limits and mediate behaviors.

What information/data will students use within this task?

Information Needed:

- Data sets related to body structures and their functions (developed collaboratively through observations)
- Understanding of various animal structures and functions

- Knowledge of human structures and functions

Prior experience with the following:

- Reading a chart (familiarity with terms like row and column)
- Familiarity with finding patterns in data (similarities and differences)

Ideas for setting up the task with students

The suggested storyline begins with Mrs. Smith’s first grade students taking a field trip to the zoo. The class had previously studied the structures and functions of various animals. While at the zoo, the students began making connections to the information they learned at school. They noticed that some animals had body parts that are similar to their own. Students wondered if the animals with similar body parts used them in the same ways that humans do.

This task is to be completed in three parts. The first two are important because students work together to gather information that will be used to support a claim later in the task. The task parts are outlined in the **suggested facilitation plan resource** document. **Parts A and B** can be completed in a variety of engaging ways. You need to determine what is best for your students based on their ability level. During these two parts you will gain insight about students’ ability to identify patterns (similarities and differences) and design a chart that will convey their findings. **Part C** is to be completed independently by each student using the information they gathered in the first two parts of the task.

Intent of the Task for Assessment

Set-up for this task requires much student engagement and teacher facilitation to develop the “data” used by the students in the task. The “data” used for the task is the collaboratively developed chart* as described in the facilitation plan. Thus, the independent evidence the task is intended to elicit is the student’s ability to analyze the collaborative data chart in order to identify an animal in the chart (make a claim) that has three structures that have the most similar function, or purpose, as their body. Because the student is analyzing the chart for similarities and differences to their own bodies, the teacher can get evidence of a student’s competency with patterns thinking as appropriate for grade 1.

*Note: A teacher can get a lot of evidence of student thinking in this collaborative experience, but this is not part of the independent student task.

Success Criteria

Evidence of Learning Desired based on Progression from Appendices

Analyze and Interpret Data

- Use observations to describe patterns and/or relationships in the natural and designed world in order to answer specific questions and solve problems.

Patterns

- Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.

Engaging in Argument from Evidence

- Construct an argument with evidence and support a claim.

Success Criteria

The student makes a claim as to which animal has three structures that function most like them and explains how the function is similar, based on:

- Evidence from data chart that the class generated collaboratively.
- Identification of accurate similarities (patterns thinking) between the organism and themselves.

Possible Student Responses

- Student uses data collected to make a correct argument.
- Student accurately identifies an animal whose body structure is used in a similar way to their own, e.g., raccoons use their hands to hold food and eat, so do humans.
- Student creates an argument for an animal that has at least three body structures similar to his/her own that are used in the same way, and makes the connection that similar body parts will usually have similar functions.
- Student uses data collected during observations to support his/her claim.

Other information teacher teams might find useful when preparing to use this task in the TCT process

During task facilitation, we realized that we needed to create a chart to record observations from the animal cards. We typed up the student observation information and printed the chart for use when completing Part C (See facilitation document for example. Others facilitating should create a chart based on their student responses. It was helpful for students to have an individual copy of

the observation table when they were working on the student response page. Of course there are other ways to compile student observations, e.g., all information could be written on chart paper or shared through use of a Whiteboard.

Extensions and/or other uses after the task is implemented

- Students further their understanding of this concept by engaging in additional observations to identify how animals carry out functions similar to humans using different structures.
- Students engage in deeper learning about the similarities and differences of specific animal structures.

Pick 3 Just Like Me! Suggested Facilitation Plan:

This task is designed to be completed in three parts, two of which are indented to be completed collaboratively. Please read this document carefully as two of the three parts require that students collaborate to generate data needed for task completion.

Storyline: *Mrs. Smith's first grade students are on a field trip to the zoo. While at the zoo, the students notice that some animals have body parts that are similar to their own. Students wondered if the animals with similar body parts used them in the same ways that humans do.*

PART A: Students analyze their own body parts (structures) and identify the function of each.

This scaffolded part of the task can be completed during whole group discussion. It is not part of the success criteria but teachers can gather evidence of learning related to each student's ability to make and record observations.

The intent of Part A is for student to share their understanding of their body structures as well as the corresponding functions of each structure. This part can be completed in multiple ways as long as the result is a class chart that illustrates student thinking. It is recommended that students engage in the development of the chart. Elicit their ideas on what the chart should look like, what to include and why. Allow students to help determine the best way to display the information that is gathered through their observations. Ask questions such as:

- a. How will we record this information so we can use it later?
- b. How can we capture the information to make it easier to read?
- c. What information should we include in a chart if we have been observing how our body parts work?

Some suggested strategies are:

1. Create a list of external body parts to use to make observations:
 - How do we use our hands? (Students observe a partner and record what their hands do in a 2 minutes period (grasp, touch, gather, and/or throw)? Our feet?
 - What is the function of our heads? Legs? Eyes? Ears?
2. Have students observe short movie clips and record how body parts are used during the movies.

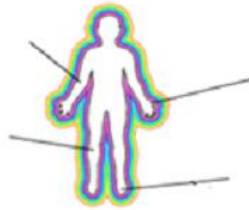
Resources: Part A

Chart ideas/examples:

1. Create a simple chart to record body parts and functions.

Body part	How it functions (possible student responses)
feet & legs	Move from place to place, swim, jump, run, hop, walk
hand	Holds, grasps, clasps, grab, scoop, dig
nose	Smell, sense food
eyes	See – need light, don't eye well in the dark
ears	Hear, some sounds clearer than others
Mouth/tongue/teeth	Chew, taste, bite, swallow, lick

2. Use a student's body outline similar to this one, draw lines from body parts to tell function.



3. Draw a picture of the body part, then draw lines out from picture to tell function.



Part B: Identification of structures/function of several animals:

The intent of this part of the task is for student to closely observe the structures of various animals and how they are used. This part can also be completed using an array of different strategies. However, it is recommended that you use the suggested animals (dog, bear, fox, frog, raccoon, owl, hummingbird, and squirrel). Much thought has been given to the animals that would best support the intent of the task.

Consider the following strategies for completing Part B:

1. Small groups of students are given a photograph of one of the animals. They annotate the photograph by identifying various body structures and note the function of each structure. The result is much like a web.
2. Students watch video clips that provide opportunities to observe the various animals and the way that they use their body structures. Again, students can create webs to capture new information related to structure and function of various body parts.
3. Encourage students to read nonfiction text to gather more information about each animal. Consider using magazines like Ranger Rick or Our Backyard. Many resources are available online.

Once students have gathered information have them work together to record what they found out into a large chart on butcher paper. The important part here is for students to “read” the data to find similarities in the way certain structures are used by different animals (patterns thinking).

Sample Class Chart not intended for duplication or use by other facilitators. Each chart should reflect the thinking of the students engaging in the task.

<p>Squirrel</p> <p>Nose: smell, protection, breathe</p> <p>Hands/Arms: climb trees, grab, push, get food into their mouths, climb up and down, lift, pick up, grasp</p> <p>Feet/Legs: stand, move, jump, climb, protection, scratch</p>	<p>Rear</p> <p>Eyes: see, watch where they are going, protection</p> <p>Ears: listen for danger, hear</p> <p>Mouth: catching food, biting, eat, drink</p>	<p>Frog</p> <p>Eyes: protection, see its prey, see</p> <p>Feet/Legs: jump, stick to the tree, move</p> <p>Mouth: eat, drink, breathe</p>
<p>Dog</p> <p>Eyes: spot its prey, look around, look for food</p> <p>Ears: help cool it off on a hot day, listen for prey, hear a noise</p> <p>Nose: pick up a scent, breathe, smell</p>	<p>Raccoon</p> <p>Nose: breathe, smell food, protection, smell</p> <p>Hands/Arms: climb, crawl, grab, get food to their mouth, scratch, touch, scoop</p> <p>Mouth: eat, growl, drink, bite, breathe</p>	<p>Fox</p> <p>Eyes: see, see danger, protection</p> <p>Ears: hear, protection, hearing and finding prey</p> <p>Nose: smell food, breathe, protection</p>
<p>Owl</p> <p>Eyes: see a mouse, look for food, protection</p> <p>Mouth: eat food, give a signal, sing, bite to eat</p> <p>Feet/Legs: grab food, give their baby food, stand, walk</p>	<p>Hummingbird</p> <p>Eyes: see, find food, look, protection</p> <p>Feet/Legs: hold on, move around</p> <p>Mouth: drink, eat, whistle, breathe</p>	

Part C: The Task - Independent student work or small group. Teacher records individual student thinking.

Each student demonstrates their ability to read data (in class charts) in order to identify similarities and differences in animal and human structures. They also use the data they collected to identify similarities in how both animals and humans use similar body structures in similar ways.

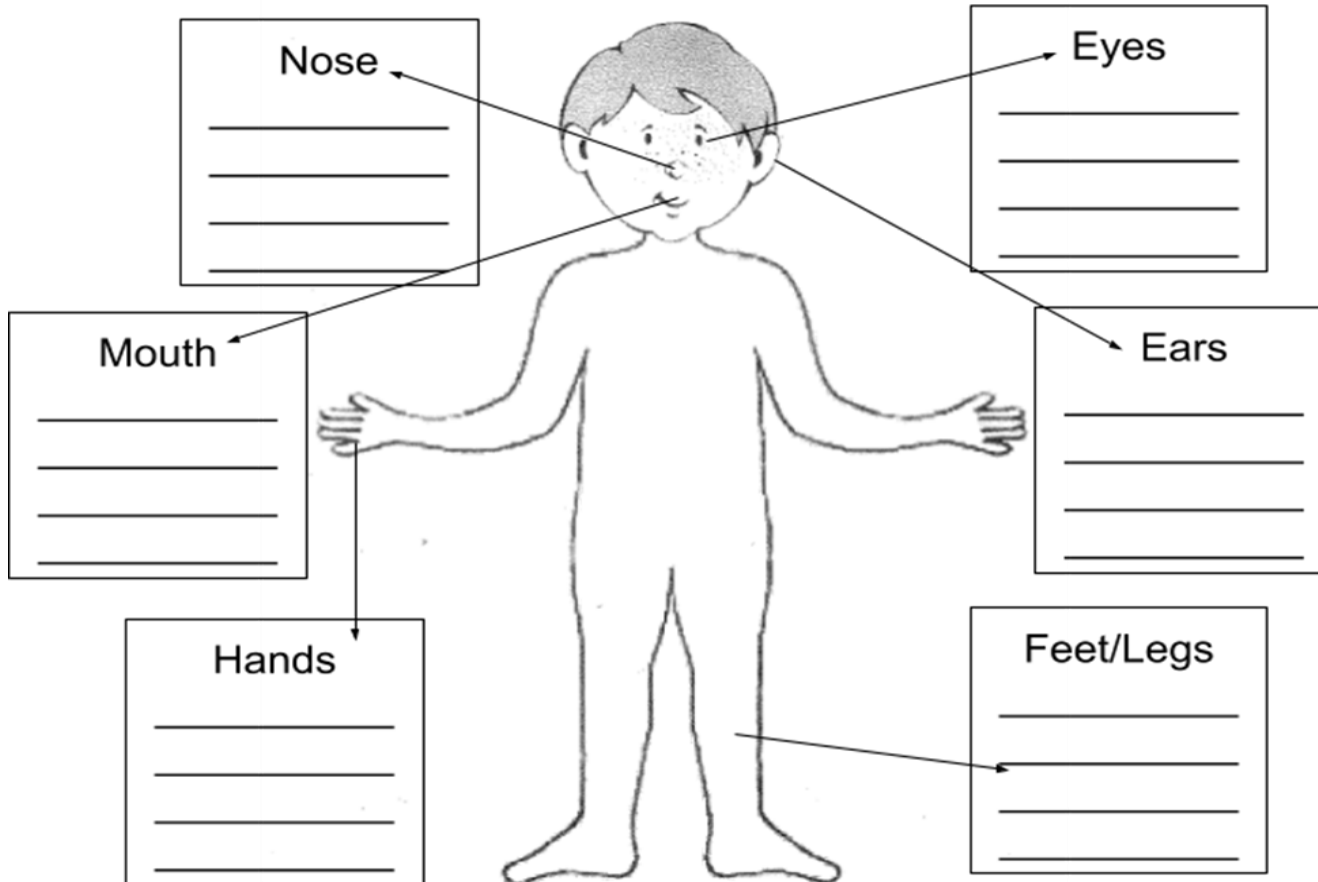
First, have students complete the page with the outline of the child. Here they are to identify animals that have similar body parts as their own. Then, of those animals identified for each body structure, students are to look carefully at the data to find one animal that has at least three body parts that function similarly to theirs and tell how they are similar. Provide students with a table to complete for this part of the task.

Through Course Task – Just Like Me

Name _____

Date _____

Directions: For each of the body parts identified in the diagram, find two animals whose corresponding structure functions in the same way as yours. Write the name of the animals in the boxes on the diagram below.



Through Course Task – Just Like Me

Using the information in your diagram and from other class charts, **identify one animal has at least 3 body parts (structures) that function in the same way that yours do.** Tell how each part of the animal you identified functions like your body parts.

An animal that has 3 structures that function like mine is a _____.

	My body part/structure	The animal's body part/structure	Tell how both structures function in a similar way.
1.			
2.			
3.			