



# Science Assessment System Through Course Task

There's No Place Like Home

**Grade Level:**

K

**Phenomena:**

Needs of Organisms

**Science & Engineering Practices:**

Analyzing and Interpreting Data  
Constructing Explanations and Designing Solutions

**Crosscutting Concepts:**

Cause and Effect

Designed and revised by Kentucky Department of Education staff  
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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.

## There's No Place Like Home Task Annotation

**After categorizing** *the needs of organisms (food, water, shelter),* **make a claim** for *how the specific needs of other organisms are met,* **supported with evidence based on observations** of *the organism in its environment that* affect *having its needs met.*

### Phenomenon within the task

Animals need food, water, air and space in which to live. Animals live where they can get what they need from their environments. (For example, fish swim in water so they live in lakes, rivers, ponds and oceans; deer eat buds and leaves so they live in the forest. Rabbits live in fields and woods where there is grass to eat and space for burrows for homes, etc.)

A kindergarten class observed pictures of a frog and discussed what the frog needed to survive and how he got it from the environment where he lived. The class was asked to categorize the common needs of organisms using the evidence in the picture and background knowledge. Pictures of two other animals and how they get what they need from their environments were discussed. Students were asked to make a claim about the other animals getting what they need from their environment based on the pictures and their background knowledge and to evaluate the quality of evidence they have to support their claim. Students were asked to share their ideas to be charted and to support with evidence from the pictures and/or from background knowledge.

### How the phenomenon relates to DCI

K-ESS3.A Natural Resources

Living things need water, air and resources from the land, and they live in places that have the things they need.

### What information/data will students use within this task?

Students will look at slide 1 and discuss the animal in the picture. Teacher will guide students to describe where the frog is, what the frog needs to survive and how he gets it from his environment. The teacher will also guide the students into describing their source of the information. For example, was the evidence in the picture? Or did we learn about it from another source? The teacher will chart student responses.

After generating a list, students will put the ideas into **categories** with support (not teacher created categories).

Students will look at slide 2 and discuss the animal in the picture. Teacher will guide students to describe where the bear is, what the

bear needs to survive and how he gets it from his environment Students will look at slide 3 and discuss the animal in the picture. Teacher will guide students to describe where the bird is and what the bird needs to survive. How sure are you that these animals' needs are being met by their environment? The teacher will help students to find the specific evidence in the pictures to support the claim that animals get what they need to survive from their environment. What needs do these animals have that are not supported by evidence in these pictures? How do you know these needs are being met? What source is your evidence? (Background knowledge) **Students will work with partners or small groups to consider these questions with prompting and support from teacher. Students will share their ideas and teacher will chart their responses.**

The following SEP will be used to process the information.

Analyzing and Interpreting Data

- Categorize and record information.
- Use and share pictures, drawing, and/or writing of observations.
- Use observations to describe patterns and/or relationship in the natural world in order to answer scientific questions.

### **Ideas for setting up the task with students**

This task was created to use toward the beginning of the school year, therefore much of the engagement is collaborative in nature and requires well planned scaffolding and support from the teacher. To begin the discussion and help students understand, the teacher may need to model her/his thinking aloud with the first picture of the frog.

The teacher may have a discussion with students about categorizing information and how it may be helpful. Discuss other situations where they may categorize things. Then the teacher will need to ask guiding questions to elicit student thinking to help students grasp the concept that all animals have the same basic needs and to categorize these needs. Categorizing the needs of these animals helps us to make sense of what all animals need.

Teacher may need to model and ask questions to help students see the specific evidence in the pictures and that the picture is the source of this evidence. Teacher may also need to model how he or she has background knowledge about some animals and their needs and what is the source of this information. It might also be helpful to model that the source may be a reliable source (science video) vs a not so reliable source (cartoon).

### **Intent of the Task for Assessment**

Students will evaluate pictures of other organisms in their habitat to **make a claim** for how these organisms meet the needs

identified in the categories. Students will **provide evidence to support their claim** and identify where the evidence came from (Observable in the picture with a reasonable assumption? Personal background knowledge?) **It's only reasonable that students will tend to lean on background knowledge; rather than fight this, have the students reflect on where their evidence to support their claim comes from and clearly state that source. Having students clearly state the source of their evidence (observations and background knowledge) and their confidence in the quality of the evidence requires deeper thinking of students, and provides information to the teacher about the strengths and weaknesses in supporting a claim with evidence.**

The Science Practice, Engaging in Argument from Evidence, and the Crosscutting Concept, Cause and Effect, are embedded in the brainstorming and discussions included in the categorizing of information and the making of a claim with its supporting evidence.

### **Success Criteria**

#### *Evidence of Learning Desired based on Progression from Appendices*

##### Analyzing & Interpreting Data

- Categorize and record information.
- Use and share pictures, drawing and/or writing of observations.
- Use observations to describe patterns and/or relationship in the natural world in order to answer scientific questions.

##### Engaging in Argument from Evidence

- Identify arguments that are supported by evidence.

##### Crosscutting Concept: Cause & Effect

- Events have causes that generate observable patterns.

#### *Success Criteria*

- In a collaborative setting, the student identifies and organizes the needs of organisms into appropriate categories to support thinking about the way another organism might get its needs met from its environment.
- Student makes a claim for how an organism gets its needs met from the environment it lives in and supports that claim with evidence.
- Student provides judgment on the quality of his/her evidence that seems appropriate to the student.

#### *Possible Student Responses*

See charts:

What does a frog need?		Evidence in picture
When it gets thirsty, it drinks water.	water	yes- pond
When it gets hungry it eats insects.	Food	yes - insect
When it is too hot, too cold, raining, snowing or it is in danger, it needs a safe place to be.	shelter	no (Background knowledge) We have read informational texts about frogs and know that they needs leaves, rocks, tree stumps, trees, etc for shelter.

(Make a chart that is developmentally appropriate for your group. Color coding information for each animal may be helpful.)

NEEDS	BEAR (evidence in picture)	BEAR (background knowledge)	BIRD (evidence in picture)	BIRD (background knowledge)
water	river	rivers, lakes, streams		streams, rivers, lakes, birdbaths
food	fish, berries	fish, berries		worms
shelter		cave	nests	nests

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

We completed this TCT after our study of woodland animals. It was much easier to record student responses in a small group. The students were able to be involved in the discussion. The website Mystery Science provided good background knowledge for this activity, as did informational books and video clips. It took awhile for students to understand what evidence was in the picture and what evidence they knew from other sources. Depending on when in the year this task is administered, teacher may need to do additional thinking aloud, modeling and discussion regarding the concept of evidence, so that students have a solid understanding of what evidence means. We used this TCT early in the fall and found that a number of our students weren't as familiar with the term evidence at that point in the year, as they would be further on, once the term had been used frequently, not just in science instruction, but across the curriculum.

**Extensions and/or other uses after the task is implemented**

We will continue our study of animals in different habitats and how they get what they need from the places they live and will continue to use argumentation (claim and evidence) in other contexts.



## Through Course Task – There’s No Place Like Home

Slide 1



Slide 2



Slide 3



### A. Categorize Common Needs of Organisms

A kindergarten class was working in small groups with their teacher. They observed a picture of a frog. They wondered what the little frog needed to live and grow. The teacher helped them list their ideas using the evidence in the picture and their background knowledge. Then they worked with their teacher to put their ideas into categories. They wondered what does the frog do when he gets thirsty: Hungry? Cold? How does he escape a predator? What categories should we consider?

### B. Make a Claim

What about other animals? Do other animals get what they need from their environment? The students studied pictures of a bear and a bird in their natural environments. They discussed what needs were being met by each animal. What evidence can you find in the pictures to support the claim that organisms need food, water and shelter, and they live in the places that have the things they need? How can you use your background knowledge about animals and their needs to help support your claim? How sure are you that a bear that the bear gets food from its environment? Why? What about shelter? Do the pictures show the shelter for the bear? How confident are you that a bear needs a shelter or uses a shelter? What is the source of your evidence that makes you think so? We see the bird in its shelter. But what else does a bird need and how does it get those needs from its environment? How do you know? What is the source of your evidence? If you are not sure, how can we find out? Talk with your partners (or group) about the evidence you find in the pictures that animals get the things they need from the places they live and the evidence you get from your background knowledge. Be ready to share your ideas to be recorded on 5.

You have the following resources:

1. Powerpoint pictures of a frog, bear, and a bird in their environments (used in class discussion)
2. Chart paper and markers

# There's No Place Like Home - Small Group Data Collection Tool

Directions: It is recommended that this task be completed collaboratively by small groups of students in order to capture examples of individual student thinking to later analyze for next steps of instruction. **NOTE:** The Data Collection Tool from **one** small group can serve as student work sample when submitting to KDE along with picture of class created chart.

Success Criteria - Record specific comments that provide you with evidence of individual student thinking along with the appropriate symbol from the list below for each of the three success bullets:

“+” if able to provide appropriate evidence aligned to success criteria

“-” if able to provide somewhat appropriate evidence aligned to success criteria

“0” if unable to provide appropriate evidence aligned to the success criteria

Student Name	1) In a collaborative setting, the student identifies and organizes the needs of organisms into appropriate categories to support thinking about the way another organism might get its needs met from its environment.	2) Student makes a claim for how an organism gets its needs met from the environment it lives in and supports that claim with evidence.	3) Student provides judgment on the quality of his/her evidence that seems appropriate to the student.

# There's No Place Like Home

How do animals get the things they need from their environments?

Frog





# Bears





# Birds

