

# MeTEOR Learning Modules

## STEM MEA (Model Eliciting Activity)

### Creating a Trap





## Gingerbread Man Trap

### Reflective Planning

#### Description/Summary of Lesson:

This lesson will be focused on creating a trap for the Gingerbread Man. Students will use various supplies, and create a device that will catch the Gingerbread Man overnight.

#### Essential Questions:

- What are the specific qualities that go into engineering and design of a trap?
- How will you use various supplies to design a new tool?
- How will you know your design was effective?

**Suggested Grade Level:** K-1

**Approximate Time:** Two days (30 minute class periods)

**Teacher's Role:** Demonstrator and Facilitator

**Class set-up:** Groups of two students at tables or desks put together

#### Success Standards:

- Students can recognize that some books and other media portray animals and plants with characteristics and behaviors they do not have in real life.
- Students can observe that a push or a pull can change the way an object is moving.
- Students can investigate that things move in different ways, such as fast, slow, etc.
- Students can compare the observations made by different groups using the same tools.
- Students can explain how scientists alone or in groups are always investigating new ways to solve problems.
- Students can develop and use models.

#### Learning Purpose:

- Students will ask questions, make observations and gather information about a situation people want to change.
- Students will define a simple problem that can be solved through the development of a new or improved object or tool.

**Vocabulary:**

- Trap
- Investigate
- Engineer
- Observe
- Problem
- Solution

**Math Practices:**

- MP 1: Make sense of problems and persevere in solving them.
- MP 4: Model with mathematics.
- MP 5: Use tools strategically.
- MP 7: Look for and make use of structure.
- MP 6: Attend to precision.

**Depth of Knowledge:**

- DOK Level 3: Strategic Thinking

**Materials: (per group)**

- Scissors
- Glue
- Tape
- Objects of Choice (cardboard, paper scraps, craft sticks, pens, rubber bands, paperclips, etc.)

## Summary of Tasks/Experiences

**Spark Activity:** Gingerbread Man

- Read the book *The Gingerbread Man*.
  - There are many short animated videos online, if you prefer to show it. This link will take you to a 7-minute video:  
<https://www.youtube.com/watch?v=TL41lht8K0E>.
- Lead a classroom discussion on how the characters in the book tried to catch the Gingerbread Man.
- Discuss the purpose and mechanics of a trap that might work.
- Tell students they are going to make a trap they think will catch the Gingerbread Man.
- Let the students go “supply hunting” within your tool station.

## Lesson Descriptions:

### Day One

The teacher will:

- share with students that this challenge will test their group's ability to work together in building a trap that will catch the Gingerbread Man.

### Construction

The students will:

- cut out one Gingerbread Man (see template).
- create a trap for the Gingerbread Man out of gathered supplies.
- demonstrate how their created trap will work.

Teacher facilitates class asking guiding questions as students work in pairs:

- Do you think the trap will work? Why?
- What tools did you use and why?

### Day Two

The students will:

- discover if their trap worked. (Gingerbread Man will get “trapped” overnight.)
- make modifications to their traps.
- explain how their modifications are going to make their traps better.

## Student Engagement

**Social/Emotional Engagement:** Students will use social, interaction skills for completing projects with peers.

**Physical Engagement:** Students will design, create and engage the trap while working in pairs.

**Cognitive Engagement:** Students will work together using tools strategically as they define a simple problem that can be solved through the development of a new or improved object or tools.

## Evidence of Learning

### Checks for Understanding/Expected Outcomes:

- Students will build their traps.
- Students will articulate how the trap will work.
- Students will be evaluated by the Rubric

**Teacher Notes:**

- Through this STEM activity, students should be exposed to the engineering process of design, build and modify.
- Teachers are looking for any trap that is able to close over the Gingerbread Man. The moving parts are the key to success.
- Teacher should place a Gingerbread Man “overnight” in every trap that represented a good concept.
- This activity could also be infused with a recycle unit where items are used for a purpose that they were not originally designed for.

### Gingerbread Man Trap Rubric

Category	4	3	2	1
<b>Problem Solving</b>	Actively looks for and suggests solutions to problems.	Refines solutions suggested by others.	Does not suggest or refine solutions but is willing to try other's solutions.	Does not try to solve problems or help others solve problems. Lets others do the work.
<b>Contributions</b>	Routinely provides useful ideas. Leader.	Occasionally provides useful ideas. Strong team leader.	Rarely provides useful ideas. A satisfactory team member.	Provides no useful ideas or refuses to participate.
<b>Attitude</b>	Never is publicly critical of the project or others. Positive attitude.	Rarely is publicly critical of the project or others. Often has a positive attitude.	Occasionally is publicly critical of the project or others. Sometimes has a positive attitude.	Often is publicly critical of the project or others. Has a negative attitude.
<b>Focus on the Task</b>	Constantly stays focused on task.	Mostly stays focused on task.	Hardly stays focused on task.	Rarely stays focused on task.
<b>Working with others</b>	Almost always listens and shares with others.	Mostly listens and shares with others.	Occasionally listens and shares with others.	Rarely or never listens or shares with others.
<b>Comprehension of Concepts</b>	Demonstrates understanding of concepts.	Demonstrates understanding of most concepts.	Demonstrates understanding of a few concepts.	No demonstration of understanding of concepts.

**Total \_\_\_\_\_/24 Points**

Choose one gingerbread man and color it then cut it out.  
Your gingerbread man must fit inside the trap you build.

\*Copy onto cardstock.





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