

Prompt: The Itsy Bitsy Spider STEAM Project

Objective(s): Students will work collaboratively to design and build a model of a water spout using various materials, showcasing their understanding of how the Itsy Bitsy Spider persevered and climbed up the water spout despite challenges.

Activity that Involves problem-solving and strategic thinking:

- Students will investigate different ways to represent the Itsy Bitsy Spider's journey through a STEAM activity.
- Through collaboration students will work together to create a final project that combines their individual strengths.

Standards addressed:

- CCSS.ELA-LITERACY.RL.K.2: With prompting and support, retell familiar stories, including key details.
- CCSS.MATH.CONTENT.K.G.A.2: Correctly name shapes regardless of their orientations or overall size.
- NGSS.K-PS2-2: Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

Background knowledge needed:

- Familiarity with the Itsy Bitsy Spider nursery rhyme: Students should have prior exposure to the nursery rhyme and understand the basic storyline of the spider climbing up the water spout.
- Basic understanding of shapes and structures: Some knowledge of basic shapes like circles, triangles, and rectangles, as well as how structures are built and interconnected, would be helpful for designing and building the water spout model.
- Teamwork and collaboration skills: Students should have some experience working in small groups, sharing ideas, and collaborating with peers to achieve a common goal.
- Spider Webs:
 - Discuss the purpose of spider webs and how spiders use them to catch prey or protect themselves.
 - Explore the different types of spider webs and the materials spiders use to build them.
 - Demonstrate the structural integrity of spider webs and how they are designed to withstand various weather conditions.
 - Discuss how weather can affect the stability of structures like the water spout and how the Itsy Bitsy Spider's journey might be influenced by weather conditions.

Materials:

- Cardboard tubes
- Plastic cups
- Straws
- Pipe cleaners
- Construction paper
- Cotton balls (for clouds)
- Blue tissue paper or cellophane (for water)
- Tape
- Glue
- Scissors

Questions or statements to elicit engagement:**Questions:**

- "How do you think the Itsy Bitsy Spider felt when it kept climbing up the water spout despite the rain?"
- "What materials would you use to build a strong and sturdy water spout for the Itsy Bitsy Spider?"
- "Can you describe a time when you had to persevere like the Itsy Bitsy Spider? What kept you going?"

Statements:

- "Let's work together to design a water spout model that can withstand different weather conditions, just like the Itsy Bitsy Spider's journey."
- "I'm excited to see how each group will interpret and represent the Itsy Bitsy Spider's story through their unique water spout designs."
- "Remember, just like the Itsy Bitsy Spider, we can overcome challenges by staying determined and never giving up."

Vocabulary:

- **Perseverance:** The act of continuing to work towards a goal despite facing challenges or obstacles.
- **Obstacle:** Something that stands in the way of progress or achievement.
- **Structures:** The arrangement and organization of parts in a design or building.
- **Collaboration:** Working together with others to achieve a common goal.
- **Web:** A structure spun by spiders from silk threads to catch prey or create shelter.
- **Sturdy:** Strong and well-built, able to withstand pressure or force.

Reflection:

- How did you feel when working on the project?
- Did you face any challenges, and how did you overcome them?
- What new skills or knowledge did you acquire throughout the project?
- How did your group work together to design and build the water spout model?
- What were the strengths of your group collaboration, and what could be improved for future projects?
- Did you try any new ideas or approaches during the project?
- How can the skills and knowledge gained from this project be applied to other challenges or projects in the future?
- Can you think of any real-world situations where the concepts explored in this project might be relevant?

Extension/Adding more complexity:

- Create artistic representations of spider webs using various materials like yarn, glue, and beads to explore patterns and symmetry in nature.
- Have students retell the Itsy Bitsy Spider nursery rhyme through a creative storytelling performance, incorporating elements of drama, music, or dance.