

Core Skills Analysis

Science and Engineering

- Learned basic principles of simple machines by constructing a functional claw grabber, including levers and joints.
- Developed understanding of cause and effect as they manipulated parts to grasp and release objects.
- Explored properties of materials, noticing how cardboard can be cut, bent, and assembled to create moving parts.
- Practiced following sequential steps in building a mechanical device, enhancing procedural thinking.

Fine Motor Skills and Art

- Improved hand-eye coordination through cutting, folding, and assembling the cardboard components.
- Gained precision in using tools such as scissors and possibly glue or tape during construction.
- Applied creativity in designing or decorating their claw grabber, integrating functional and aesthetic choices.
- Enhanced spatial awareness while visualizing and constructing a three-dimensional object from flat materials.

Tips

To deepen Myuna's understanding of mechanical principles, encourage them to experiment with different designs of claw grabbers using alternative materials like popsicle sticks or straws. Introduce simple physics concepts such as force and leverage by measuring how much weight their claw can lift and comparing it to other designs. To integrate art and engineering, prompt them to decorate their project while explaining how their design choices support functionality. Finally, facilitate a group activity where Myuna and peers can collaboratively build larger or more complex grabbers, promoting teamwork and problem-solving.

Book Recommendations

- [Simple Machines](#) by Dianne Ochiltree: An engaging introduction to basic machines and how they make work easier, perfect for young learners.
- [What Do You Do With a Tail Like This?](#) by Steve Jenkins and Robin Page: Explores animal adaptations, linking to mechanical design inspiration like claws and graspers.
- [Rosie Revere, Engineer](#) by Andrea Beaty: A story encouraging creativity, persistence, and engineering skills, inspiring young inventors.

Learning Standards

- CCSS.ELA-LITERACY.RI.2.3: Describe the connection between a series of scientific steps in a text.
- CCSS.MATH.CONTENT.2.MD.A.1: Measure and estimate lengths in standard units (applied when measuring parts or objects to grasp).
- NGSS 2-PS1-1: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- NGSS 3-5-ETS1-1: Define a simple design problem reflecting a need that can be solved through engineering.

Try This Next

- Worksheet: Label parts of the claw grabber and explain their function in simple terms.

- Drawing task: Design your own unique claw grabber with creativity and write a short description of how it works.

Growth Beyond Academics

Myuna likely demonstrated patience and focus while constructing the claw grabber, skills essential for hands-on projects. This activity also encourages fine motor persistence and a growth mindset by trial and error. If they worked independently, this supports autonomy and confidence; if supported or shared, it fosters collaboration and communication.