Activity Plan: Up or Down? Investigating What Happens When Objects Are Dropped (i.e., Recognizing that Dropped Objects will Fall to the Ground)

Created for: Kayla

Grade Level: Elementary

Academic Content: Science and Mathematics

Alignment to Academic Standards

<table>
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<tr>
<th>State Standard for General Education: Science (Physical/Types of Interactions)</th>
<th>Dynamic Learning Maps (DLM) Essential Elements (EE)</th>
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<tr>
<td>5-PS2-1. – Support an argument that the gravitational force exerted by Earth on objects is directed down</td>
<td>EE.5-PS2-1. – Initial Level: Recognize the direction an object will go when dropped.</td>
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<tr>
<td>Common Core State Standards for Mathematics</td>
<td>Dynamic Learning Maps (DLM) Essential Elements (EE)</td>
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<tr>
<td>K.CC.6. – Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.</td>
<td>EE.K.CC.6. – Identify whether the number of objects in one group is more or less than (when the quantities are clearly different) or equal to the number of objects in another group.</td>
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IEP Goals:
- Kayla will use tactile and visual approaches to explore objects
- Kayla will compare groups of objects (i.e., sets)
- Kayla will increase her spoken language vocabulary

Materials:
- Brush, bean bag, balloon, feather
- Two boxes or large containers

Preparation:
- Select objects to be dropped (e.g., brush, balloon, bean bag, feather).
- Identify target vocabulary for lesson (e.g., up, down, brush, balloon, bean bag, and feather).
- Prepare boxes with a picture of an arrow indicating up or down (make arrows tactile as needed).

Activity Steps:
- Provide anchor statement for activity. Say, What do you think will happen if I drop this brush?” Acknowledge student’s prediction. “Let’s see what happens when I drop the brush.” Drop the brush. “The brush went down when it was dropped just like you said it would (or correct prediction if necessary). We can experiment with other objects to see whether they go up or down when they are dropped.”
- Guide the student’s hand to the objects that will be used in the experiments and allow time to explore.
• Assist student to drop each item, using hand-under-hand guidance as needed.
• Summarize the results of each experiment by saying, “The ___ went _____ [up or down]”, using spoken language and/or signing. Encourage the student to repeat “up” or “down” as appropriate.
• Tell student you have a box for things that go down when dropped (guide student to the “down” box) and a box for things that go up when dropped (guide student to the “up” box). Each box is labeled with a tactile arrow.
• Assist the student in placing the object dropped in either the “up” box or “down” box as appropriate, providing guidance as needed. These boxes are the comparison groups.
• After all the experiments are completed (and all the objects are sorted into one of the two comparison groups), ask student to complete the following concept statement: “When objects are dropped, they go _______.” Assist the student in exploring the up/down boxes again to discover that none of the objects when up when they were dropped and all the objects went down.

Implementation Tips:
• Encourage spoken language as appropriate.
• Gradually fade prompts over time to allow student to demonstrate independent responses.
• Be sure to provide ample wait time to allow student to initiate involvement.
• Ideas for completing the concept statement can include symbols, pictures, voice output communication aid.

Taking it to the Next Level:
• Develop an experience book to go with the activity.
• Repeat the activity with peers in general education classroom.
• Have peers repeat activity with the student.
• Have peers complete activity with different objects.
• Student repeats activity with objects from activity.
• Compare boxes to see that there are no objects in the up boxes and that all objects are in the down boxes.

Resources:

Photograph by J. Brickhouse