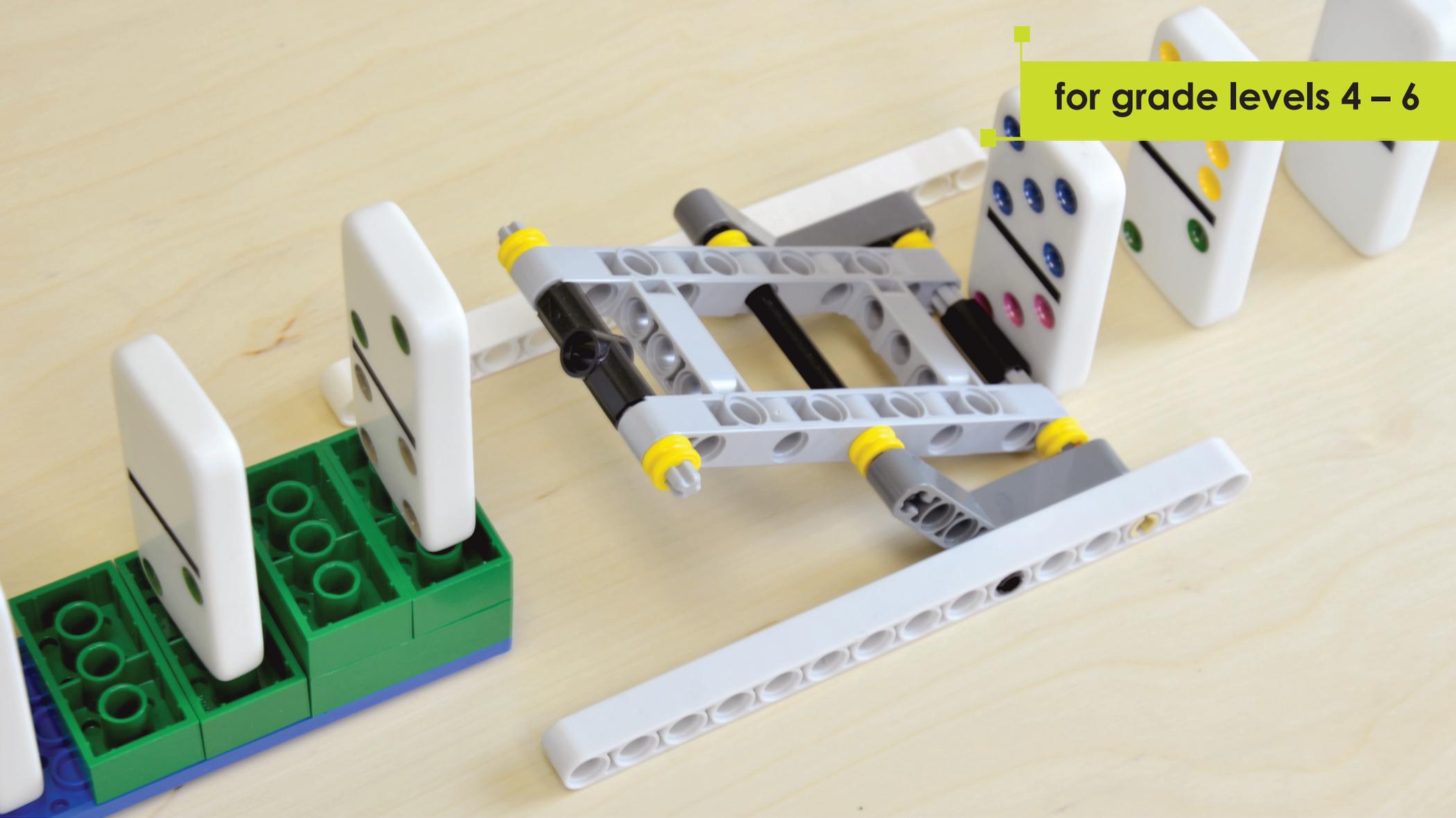


for grade levels 4 – 6



ACTIVITY 1: LIFTING LOADS: LEVERS

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The Rube Goldberg Challenge

After viewing the first video on Rube Goldberg Machines, you should now have a solid understanding about levers. Use the video as a starting point to explain the lever and how it can help move heavy items.

Objectives

(*Science*) Investigate how forces applied through simple machines affect the amount of resulting force.

Lesson Flow

1. Show your class Enable Education's E3 video about Levers.
2. Have a group discussing about levers.
Prompts:
 - Where do we see levers in our everyday lives?
 - Can you give me an example of levers that lift heavy objects?
 - Where can we find these levers?
 - Have you ever found something that was too heavy to lift?
 - Would levers have helped you?
3. Explain to the class that you will be doing an experiment on heavy lifting using a simple lever.
4. Break the class into small groups of 3 - 4. Each group will need chart paper, markers, and a yard stick. Tell the students to chart out a hypothesis of how they will lift heavy textbooks using a fulcrum and a yard stick. Have them make hypothesis' about where they should place the fulcrum to easily lift the textbooks.

Materials/Preparation

- Multiple yard sticks.
- Chart paper.
- Triangle blocks
- Markers
- Art supplies

Classroom Accommodations

Some students may find working in groups to be challenging. These students can do this experiment in a quiet place to help them complete the task without interruption.

Ensure that you can provide a quiet learning area in your classroom or school so that students who learn best in an uncluttered environment can do so.

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5. Once the students have filled in their chart paper, hand out the materials for the lesson (fulcrum, yard stick and 3 heavy textbooks).
6. Instruct the students to write down and document each of their experiments. Walk around the room and check for understanding by listening to students' conversations. Make sure they are documenting their efforts in a workbook or journal.
7. Once the students have completed their task, have them present their ideas. Post the hypothesis chart paper around the class. Ask if any group would like to come up and present their findings.
8. After groups have presented have the students write a paragraph about their experience that includes a conclusion to the experiment.

What's Next?

- ▶ Levers have played a large part in history. Have your class research how levers have been used in a specific historical time period or society. Have the students investigate how they were used and how they benefited the people that used them (e.g. Levers were used in Ancient Egypt as a way to lift heavy containers of water). (*History, Social Studies*)