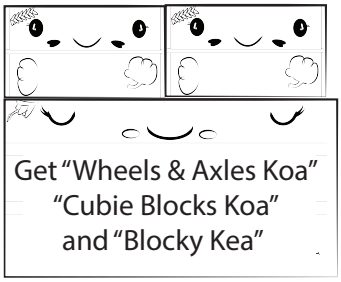
STEMTaught® Next Generation Science Correlation

The Scientific Method NGSS- Earth and Human Activity 5-ESS3-1. Obtain and combine information about ways we use science ideas to protect earths resources and environment.

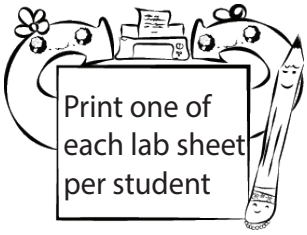
- Students plan an experiment with blocky isolating one variable using the scientific method
- Students test, observe, measure and record the results of their experiment
- Students graph their data and interpret their results

Lab Prep:

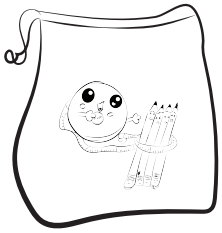
1



2

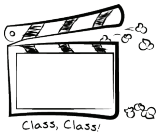


3



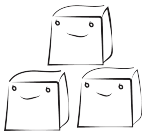
4

Get Mezzie From Kea (one per student)

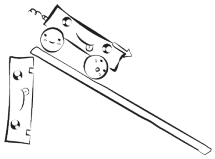


Lab 1:

1. **Show the in-class Movie** (5 min).



2. **"How is Speed Related to Energy?"** (10 min) **-** Introduce students to Blocky and his friends (the ramp spacer and Cubie). Tell them these will be the materials they use to design an experiment. Show how the ramp spacer helps alter the ramp height. Show them the Cubie Blocks and how they could be an obstacle. Let your class know they can use any of the tools for their experiment but they need to change just one variable.



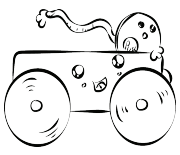
3. **Teams Design Their Experiment** (20 min) - Students work in pairs to choose one variable to alter and then hypothesize how altering that will affect Blocky's speed and energy. Ask students to fill out their scientific method lab sheet as they design their experiment. Guide students in determining what they will measure and how they will label their graph.

4. **Writing if Then Statements"** (10 min) – This helps teams get a solid plan that they are ready to test in the next lab. Some student teams may need some direction and take more time then others. If some are complete before others have them sketch their experiment on the back of the paper.

5. **Work on Measuring Skills** (10 min) - Discuss units of measurement cm and in. Pass out Mezzie and let the students measure Cubie blocks, Ramps and Blocky in both cm and in and write the info on the top of their lab sheet. This will help insure students understand how to use their tools correctly. Walk around while students do this step as many students need to work on this skill.

Lab 2:

1. **Find and Set Up an Experiment Area** (10 min) Students work best with space. We find the lunch room to be a great place, or the basketball court at school. All students need to bring a pencil and their data collection sheet. Each pair of students will need a ramp, a blocky body, 2 axles, 4 wheels, 1block spacer, 1 Mezzie, and cubie blocks or extra ramps needed.



2. **Experiment Time** (40 min) Enjoy walking around and seeing how creative your students can be. Assist them in measuring and recording their data.

Lab 3:

1. **Graph Data and Draw Conclusions** (30 min) Help students graph and write their conclusions.