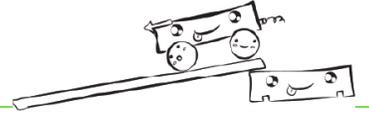




# BLOCKY CAR RACES AND PROGRAMMING

Grades K-3/4-8



## PRACTICE USING THE SCIENTIFIC METHOD

**K-3:** Students will program their robots

**4-8:** Students will do a fun Blocky Car experiment

### SAIN UU!

5 min

#### Sain uu is Mongolian for hello! (pronounced say-noo)

Greet your students. Be friendly. Use their name, ask a question, give a high five, or a thumbs-up! Take roll. Mark down which students took a snack and tally the snacks given out.

### SNACK / FREEPLAY

30 min

#### Enjoy Free Play:

Students enjoy playing outside and eating their snacks.

### STORY TIME

15 min

#### Read the story:

Read the story of the day. Older students may choose to read their own books.

### STEM TIME

50 min

#### Grades K-3: Program your robots

##### Instructions:

STEM Coaches will go to the portal and help students with the next Edison programming lesson they are on. Students may choose to build a Lego creation on top of their robots.

Link to portal: <https://www.stemexpandedlearning.com/robotics>

#### Materials:

- Chromebooks
- Robots
- Legos



**STEM TIME**

50 min

**Materials:**

- Blocky cars
- Wheels
- Axels
- Ramps
- Mezzie measuring tapes
- Pencils
- Blocky experiment worksheets

**Grades 4-8: Blocky car experiment**

Students run an experiment and graph their results. They then use the results from their graph to predict what will happen and test their prediction.

**Say-** "Today we get to do an amazing lab with a fun tool named Blocky. You will get to work as engineers to collect data, make a graph and use it to form a hypothesis, and then test your hypothesis. Evaluate the pattern and use it to form a hypothesis. You will need to be careful when you measure today, and always use the same side of the measuring tape whether you choose inches or centimeters."

**Instructions:**

1. Divide students into pairs. Have each pair of students build a Blocky car, take a ramp and one extra block car to use as a spacer.
2. Bring students outside with their materials.
3. Refer to the student and STEM coach pages from the STEMTaught Journal.
4. Test and measure Blocky car at the low and high ramp height.
5. Graph their data and extrapolate a line to make their prediction.
6. Test their prediction for how far Blocky will go at the medium ramp height, and see how close their measurement got to the actual results.
7. Discuss the differences from their prediction to their result.

**Say-** "Isn't it amazing that math helped us know how far Blocky Car would roll at a medium ramp height before it happened. If your prediction was off it might have been due to your data. You can try it again if you want a better result."

**Ask-** "What things might have affected your data collection."

**Example-** "Cracks in the sidewalk. Inconsistent measurement. Using centimeters sometimes and inches at other times."

## SPORTS / GAMES

25 min

\*Older students may practice their sport if they don't want to play the game.

### Materials:

- Volleyball
- Cones or chalk

## HOMEWORK / FREE PLAY

20 min

## CLEAN UP / DISMISSAL

5 min

### Human Net Volleyball

The students will play volleyball and work in their teams to hit the ball over the net and try to score a point.

Instructions- Organize students into three teams. Two teams will be the volleyball players, and the third team will be the human net. The human net will be lined up in the center of the court or play area. The students will play volleyball and work in their teams to hit the ball over the net and try to score a point. The catch is that the human net can catch the ball and keep it from going over to the other team. The net team will have a space marked either with cones or chalk that they cannot step out of. When one of the volleyball teams scores, they get a point. If the net catches the ball, they get a point. If the net steps outside of their space, they lose a point, and if either volleyball team steps into the nets space, they lose a point as well. The STEM Coach can decide how many points the game goes to.

### Instructions:

Allow your students some homework time. If they need help let them know you can help them. If they do not have any homework they can have some reading time, or they can have free time to go outside and play.

### Clean up/pack up/dismissal

Clean up, pack up and head home.