KIDS BUILD THEIR KNOWLEDGE AND SKILLS ABOUT THE WORLD THROUGH STEAM

Topic: **Acceleration and Distance**

Resources: instruction cards 420, 421, one of 425 or 426 and the corresponding construction material; six straight rails; six curved rails; two buffer stops; bricks with the numerals 1 and 2; activity card H-1-1; a pencil.

H-1

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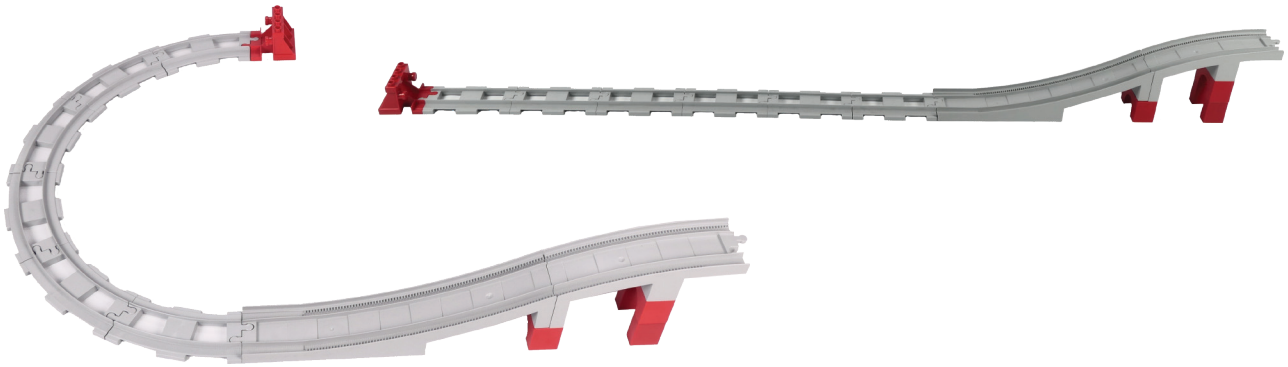
Activities:

1. The teacher distributes the instruction cards and construction materials to the teams.
2. Each team is given the job of building the car model and two ramps. One ramp will continue straight on the level. The second will continue in a long level curve. Both tracks are to have a buffer stop at the end. The children work on these constructions; and the teacher watches to see how they cope with them and helps if necessary.
3. The teacher discusses with the children from which ramp the car will travel the longer distance after being released from its highest point. It is hypothesized that this will probably be the straight one.
4. The teacher sets the teams an experiment to undertake. They do this by following these instructions:
   - Each team places their car at the highest point of the ramp with the straight level section. They let it run down by itself and continue running until it stops.
   - They mark the point at which it stops with numeral brick 1.
   - After that, they place the car at the highest point of the other ramp, the one with the curved level section, and let the car go down and run until it stops.



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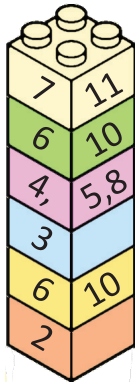
- They mark the point at which it stops with numeral brick 2.

5. The teacher distributes H-1-1 activity cards for recording the results of the experiment. Firstly, the teams must find the card with the picture of their car on because they will colour the rectangles that refer to it. Each team is to indicate the distance traveled in the first case and second cases by coloring in the corresponding number of rectangles.
6. The teacher asks the teams to compare the distances and indicate on which of the two routes the car traveled the greater distance.
7. The children, with the teacher, conclude that the car travels a longer distance along the straight track. The teacher explains that this is because the curve reduces the speed at which the car runs, it stops earlier and therefore travels a shorter distance.
8. The teacher says that the teams will now exchange their model cars and repeat the experiment. They are to record the results on the H-1-1 activity card.
9. The teams exchange model cars, repeat the experiment with this other type of car and record the results on the card.
10. The teacher asks the teams to compare the results of the first and second experiment and discusses them with the children.
11. With the help of the teacher, the children come to the conclusion that the distance traveled does not depend on the model of the car, but on the nature of the track on which it runs.