Teacher Resources: Transportation Exploration

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Tech Mobile Contact Information

If you notice anything is missing, damaged, or would like consultant support or professional development, please contact us as soon as possible. Thank you!

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Website Quick Links		
Main Tech Mobile Page Tech Mobile Network	Explorations Explorations Request	Integrations Integrations Request
Indoor Gardens	Rental Items Rental Requests	Partnership in Planning

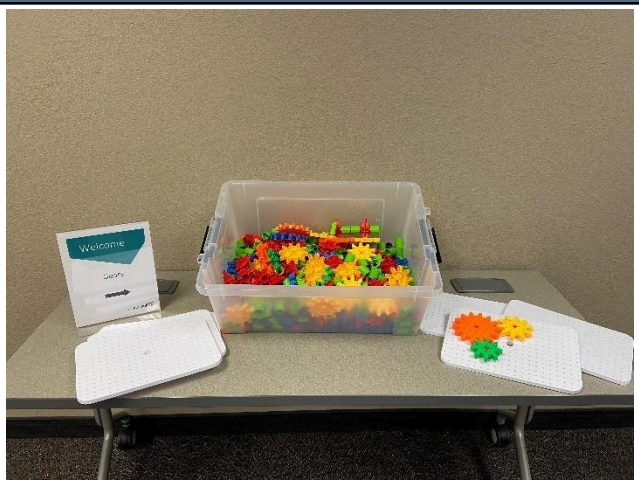
Equipment Checklist

Item(s)	Quantity
☐ Red Car	1
☐ John Deere Tractor	1
☐ A Journey Through Transportation Book	1
☐ Aircraft Engineering Kit	1
☐ Automobile Engineering Kit	1
☐ Boat Engineering Kit	1
☐ Tangram Set with laminated designs	1
☐ Lakeshore Building Set	1
☐ Lego Building Supplies	4 small totes
☐ STEM Motion Set	1 small bin
☐ Magic Trax Set	2 small totes 4 red intersection pieces 2 grey tunnels
☐ Magic Trax Battery Cars	4 cars
☐ Extra Magic Trax Cars	8 cars
☐ Road Signs	1 small tote
☐ Roll & Race Ramps	2 sets
☐ Gears	1 medium tote
☐ Wooden Ramp	1
☐ Challenge Cards	1 set
☐ Popsicle Sticks	1 set
☐ Acrylic Station Signs	1 set

Suggested Station Set-Up

Video supports located online at sourcewell.co/TechResources

Station 1: Gears



Station Includes: 1 medium tote of gears, 6 gear boards.

- This station works best on a table.
- Recommended for students in grades K-4.

Station 2: Road Design

Station Includes: 2 small totes with track pieces, 1 small tote with road signs, 4 battery operated cars, 8 smaller cars.

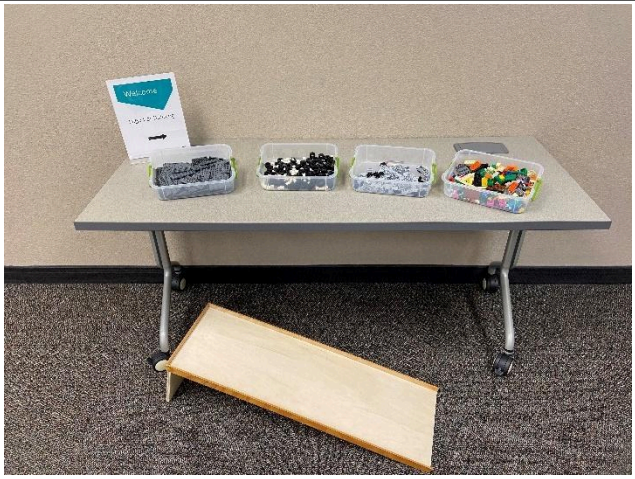
- This station works best on the floor.
- Recommended for students in grades K-4.

Station 3: Car/Tractor Repair

Station Includes: 1 red car, 1 John Deere tractor

- This station works best on the floor
  Recommended for students in grades K-4

Station 4: Lego Car Building



Station Includes: 5 small totes of Lego pieces, 1 wooden ramp.

- This station works best with the ramp on the floor and the Legos on a table

	▪ Recommended for students in grades K-4

Suggested Station Set-Up (Continued)

Station 5: STEM Motion/Roll & Race Ramps	Station 6: Engineering
	
Station Includes: 2 Roll & Race Ramps with cars, 2 STEM Motion Kits ▪ This station works best on a table. ▪ Recommended for students in grades K-2.	**Station Includes:** 1 Lakeshore building set, 1 automobile engineering kit, 1 airplane engineering kit, 1 boat engineering kit, 1 set of Tangrams and laminated Tangram Designs ▪ This station works best on a table. ▪ Recommended for students in grades K-2.

FAQ

What should I do if any of the equipment is lost or damaged?
If you notice equipment is missing or damaged, please e-mail techmobile@sourcewell-mn.gov.
Include the following information:

- Date
- Damaged or missing item(s)
- Description of what is damaged, missing, or broken
- Any additional information

Example format

Date	Missing/Damaged Items	Description
09/24/2020	Cars with the Roll n Race Ramp station	We started with 4 cars in the Roll n Race ramp station but we are only able to locate 2 of the cars.
9/24/2020	Cars with the Magic Trax station	We noticed that 2 of the cars included with this station are missing their wheels and no longer work.

Do my students have to use every station?
That is completely up to you! Feel free to omit any stations listed.

What are the popsicle sticks for?
Popsicle sticks can be used as a silent selection method when telling students which station, they should go to first. Place a single colored popsicle stick at each station sign. Hand out popsicle sticks to students. When they receive their popsicle stick, they will go to the station that matches theirs. These are completely optional.

K-4 Standards Connections

Below is a list of potential standards to consider connecting to this exploration learning experience.

Content Area	Potential Standards Connection
Kindergarten	
Math	**K.3.1.1** Recognize basic two- and three-dimensional shapes such as squares, circles, triangles, rectangles, trapezoids, hexagons, cubes, condes, cylinders, and spheres.
First Grade	
Math	**1.3.1.1** Describe characteristics of two- and three-dimensional objects, such as triangles, squares, rectangles, circles, rectangular prisms, cylinders, cones, and spheres.
Science	**1.1.1.1.1** When asked "How do you know?" students support their answer with observations. For example: Use observations to tell why a squirrel is a living thing.
Second Grade	
Math	**2.3.1.2** Identify and name basic two- and three-dimensional shapes, such as squares, circles, triangles, rectangles, trapezoids, hexagons, cubes, rectangular prisms, condes, cylinders and spheres.
Science	**2.2.2.1.1** Describe an object's change in position relative to other objects or a background. For example: forward, backward, going up, going down. **2.2.2.2.1** Describe how push and pull forces can make objects move. For example: Push and pull objects on smooth and rough surfaces.
Third Grade	
Math	**3.4.1.1** Collect, display, and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels, and units.
Science	**3.1.1.1.1** Provide evidence to support claims, other than saying "Everyone knows that," or "I just know," and questions such reasons when given by others. **3.1.1.2.1** Generate questions that can be answered when scientific knowledge is combined with knowledge gained from one's own observations or investigations. For example: Investigate the sounds produced by striking various objects.
Fourth Grade	
Science	**4.1.2.2.3** Test and evaluate solutions, considering advantages and disadvantages for the engineering solution, and communicate the results effectively.
Fifth Grade	
Science	**5.2.2.1.2** Identify the force that starts something moving or changes its speed or direction of motion. For example: Friction slows a moving skateboard. **5.2.2.1.3** Demonstrate that a greater force on an object can produce a greater change in motion.

Instructional Supports

Introduction
Below is a list of suggested ideas to introduce the exploration content to students before participating in the stations.

- Show the Tech Mobile introduction video located online at sourcewell.co/TechResources
- Utilize Tech Mobile visuals located online at sourcewell.co/TechResources
- Introduce students to various methods of transportation using the *A Journey Through Transportation* book.

Extension
Below is a list of suggested ideas to extend this learning experience beyond the exploration.

- Explore various careers in the field of transportation by visiting https://www.minntran.org/
- Explore various topics/questions related to transportation on www.wonderopolis.orgsou
- Explore more about force and motion on pbslearningmedia.org
- Schedule a Tech Mobile integration to deepen student learning with force, motion, and transportation
- Request Partnership in Planning to work directly with a Tech Mobile Consultant to design extensions