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## Lesson Plans

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## Getting Your Bearings

### Download Full Lesson Plan

(Full teacher resource documents are included)

### Lesson Focus

Lesson focuses on the concept of friction and the use of ball bearings to reduce friction.

### Lesson Synopsis

The Getting Your Bearings activity explores the concept of friction and shows how ball bearings reduce friction. Students learn about different uses for ball bearings, how the design has changed over time to incorporate roller bearings, test friction using marbles, and identify the use of ball bearings in everyday items.



**Age Levels:** 8-18

### Objectives

Learn about friction.

- Learn about ball bearings.
- Learn how engineers improved ball bearings and the development of roller bearings.
- Learn how roller/ball bearings are used in machines and impact everyday life.
- Learn about teamwork and problem solving in groups.

### Anticipated Learner Outcomes

As a result of this activity, students should develop an understanding of:

- friction
- ball bearings
- engineering design
- problem solving
- teamwork

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### Lesson Activities

Students learn about friction and how ball bearings reduce friction and extend the life of machines. Topics examined include friction, ball bearings, engineering design, and problem solving. Students work in teams using marbles to simulate ball bearings.

### Resources/Materials

- Teacher Resource Documents (attached)
- Student Resource Sheet (attached)
- Student Worksheets (attached)

### Alignment to Curriculum Frameworks

Curriculum alignment sheet is included in [PDF](#).

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