

Name: _____

Teacher Ideas and Questions: **Wheels/Axles**

This simple machine has a wheel with a rod going through the centre of it. When students complete the activities on wheels/axles they should be able to explain how wheels/axles help to pull. Lift or move heavy loads with less effort. The larger the diameter of the wheel, the less effort that is required. Students can use yarn to determine how big the diameter or the circumference is. (*Wheels have axles, pulleys have ropes or chains instead yet operate similarly.*)

*It is important for students to have the opportunity to see and use wheels/axles often found in toy building materials similar to LEGO, K-nex, miniature cars etc.

Examples of Wheels/Axles: *Rolling pins, roller skates, push carts, vehicles, wagons, screwdrivers, bike wheels, skateboards, door knob, pencil sharpener.*

1. Have students describe wheels/axles.
2. Brainstorm all the things that wheels/axles are used for.
3. Brainstorm the parts of wheels/axles.
4. Discuss the difference and similarities between pulleys and wheels/axles..
5. Have a variety of wheels/axles available for students to experiment with and or to build using a variety of materials.
6. Ask why is an axle like an inclined plane?
7. Brainstorm the non-vehicle items that use wheels/axles.
8. If you have toy cars available, remove the wheels and axles from one. Compare the difference of the two with experiments using ramps and/or pushing the cars.
9. It has been said that a wheel and axle form a kind of round lever, explain this.
10. Discuss the differences in effort and distance when the diameter of the axle/wheel is larger and smaller.
11. Brainstorm all the types of toys that have wheels/axles.
12. Make spinner toys out of classroom materials.
13. Have students bring in a variety of their toys that have wheels.