



## LESSON PLAN

### Season 2/Episode 16

#### *Pulley Experiment* (Investigating 'Lifting')

Let's Find Out features Captain Zoom and her crew of scientists with exciting experiments, curious kids and a trip to a faraway place. Produced with support from Science Foundation Ireland.

<b>Class Level:</b>	Third/Fourth Class
<b>Strand:</b>	Energy and Forces
<b>Strand Unit:</b>	Forces
<b>Content Objective:</b>	<ul style="list-style-type: none"><li>• Explore how objects may be moved</li><li>• Explore how some moving objects may be slowed down</li><li>• Design and make a pulley system</li></ul>

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<b>Assessment Method(s):</b>	<ul style="list-style-type: none"><li>• Teacher observation</li><li>• Teacher designed tasks and tests</li><li>• Work samples</li><li>• Self-assessment</li></ul>	<ul style="list-style-type: none"><li>• Conferencing</li><li>• Portfolio assessment</li><li>• Concept mapping</li><li>• Questioning</li></ul>
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# Lesson: Pulley Experiment

## Lesson Introduction

- The teacher will begin the lesson using WALT and WILF.
- Question the children on their prior knowledge of lifting.
- Click [HERE](https://www.youtube.com/watch?v=xs-h4DjF5WQ&list=PLer4jkNChuybHYhU-YSs5LW-TuLKz_SQk&index=19) for a whole class demonstration on the experiment.  
([https://www.youtube.com/watch?v=xs-h4DjF5WQ&list=PLer4jkNChuybHYhU-YSs5LW-TuLKz\\_SQk&index=19](https://www.youtube.com/watch?v=xs-h4DjF5WQ&list=PLer4jkNChuybHYhU-YSs5LW-TuLKz_SQk&index=19))

## Lesson Development

- Try lifting the weight. How hard is it to lift?
- Attach a pulley to the bar. Thread the rope around the pulley wheel and tie one end of the rope securely to the weight.
- Pull on the other end of the rope, does that make it easier to lift the weight than it was when you tried without the pulley?
- Now add a second pulley to the bar. This time, thread the rope through one pulley, around the handle of the weight, through the other pulley and then secure the end of the rope to the weight.
- Pull the end of the rope. Is it now easier or harder to lift the weight than when you had just one pulley?
- Did you have to pull more or less rope to lift the weight?

## Lesson Conclusion

- Talk and Discussion
- Discuss children's observations

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## Lesson: Pulley Experiment

Resources	Methodologies	Linkage/Integration
Two small single pulley blocks (can be bought online) 2 metre rope (that fits into the pulley blocks) 2 small clips A strong bar or stick between two supports A weight for lifting, e.g. a bucket of water	Talk and Discussion Active Learning Skills through Content Use of the Local Environment Problem Solving	Add in at teacher's discretion

### Inclusion and Diversity/Differentiation (Differentiate at teacher's discretion)

Content:

Activities:

Resources:

Product:

Environment:

Teaching Strategies:

### Scientific Explanation:

Pulleys are wonderful inventions; they are called a simple machine and they provide us with an advantage when lifting or moving a weight. In this case the pulley makes it easier for us to lift the weight; the more pulleys we use, the easier it is to lift, but we have to pull more rope to do so. With two pulleys, the weight feels two times lighter, but you have to pull two times more rope!

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