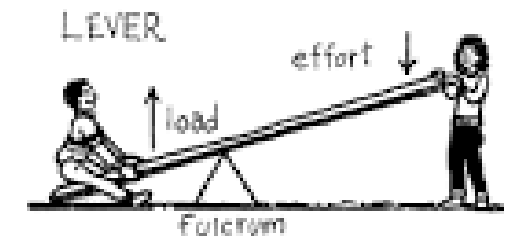
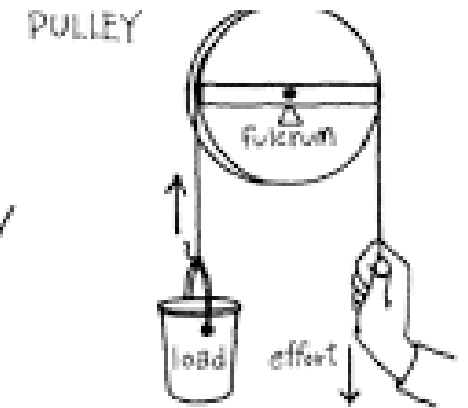
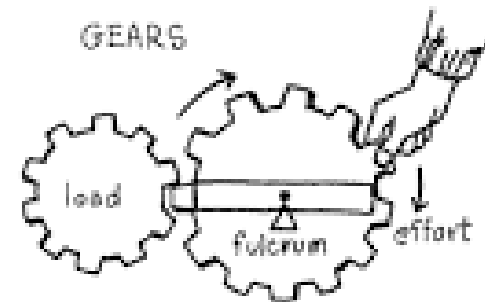


# Year 5 Design and Technology



## Levers and Pulleys

(Home learning version – Spring 2021)



## Lesson 1

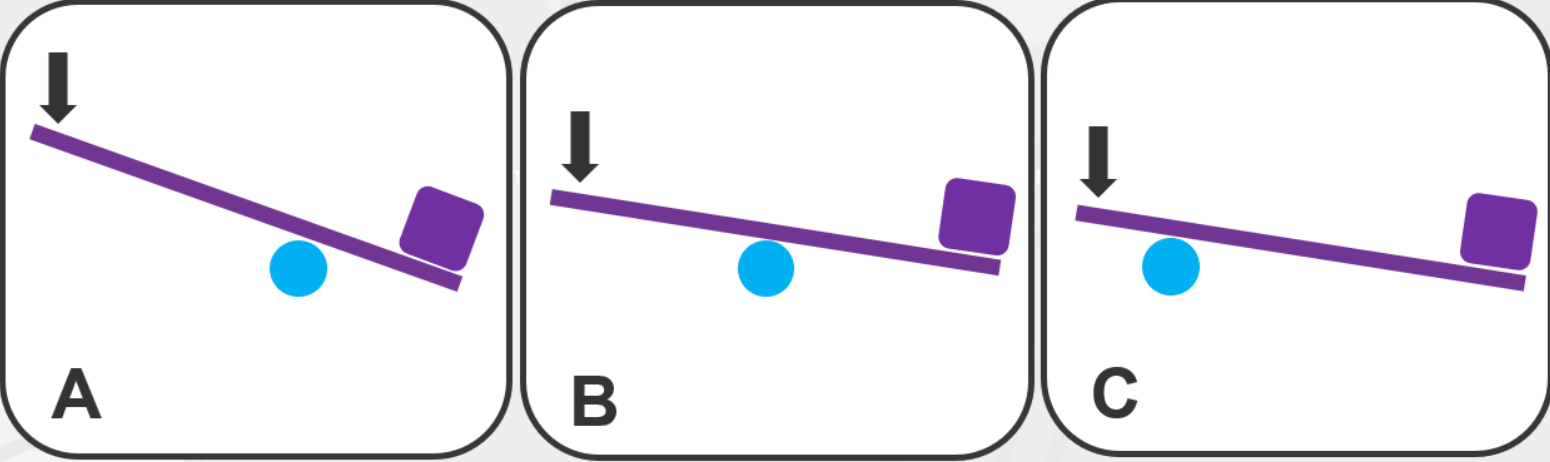
### Can I understand what we mean by levers and pulleys?

Watch the video to find out about levers:

<https://www.youtube.com/watch?v=lueqE0lxLyc>

## Levers

Levers are the simplest type of mechanism. They are really good at lifting objects and can be used to make objects easier to lift.



Here are three levers. Which lever will make lifting the block easiest?

Can you use objects at home to investigate?

Watch the video to find out about pulleys:

<https://www.youtube.com/watch?v=Nj4J7QNeBNk>

# Pulleys

Pulleys are like gears but the two wheels do not lock together.

Instead the wheels are joined by a belt. Pulleys can be used to change the speed, direction or force of a movement.



tweezers



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window blinds



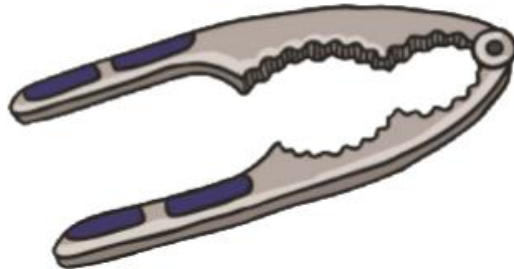
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hammer



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nut cracker



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Task: for each of these items, decide if it is an example of a lever or a pulley. If you can, explain how you know.  
Can you think of any other examples of levers and pulleys?

## Lesson 2

### Can I plan a design to solve a problem?

Moving tomatoes in Nepal: <https://www.youtube.com/watch?v=xEFXG5hjVWg>

- **The problem:** In Nepal, many farmers living on the mountainside grow fruit and vegetables, including tomatoes. To earn a living they need to sell these at the local market. The problem is that getting to market involves a long, dangerous walk down the mountainside and over a river, at the end of which the tomatoes may well be a bit squashed.
- **The challenge:** To design, build and test a way of moving tomatoes around your house, a room or garden that won't squash them!
- Today, try drawing out some designs. You will probably need to use some kind of **pulley** system. In the next lesson you can have a go at building it! You will need to think about what materials you have at home, and maybe ask a grown up for some string and anything else you need.



## Lesson 3

### Can I build and test a pulley system?

In today's lesson, have a go at building your design to move the tomatoes (or something else!) around your room, house or garden.

You might have to change your design as you go along in order to solve problems or depending on what materials you have.

How many tomatoes can you move in 2 minutes?

Your teachers would love to see what you create!



## Lesson 4

### Can I evaluate my pulley design?

You might have used something other than tomatoes, and at home you may have needed to get quite creative depending on what materials you had!

Evaluate your design and think about improvements that you could make.

# Squashed Tomato Challenge

Name:

Class:



**Which design did you choose and why did you choose it?**

**How many tomatoes or what weight of tomatoes did your design move in 2 minutes?**

**Do you think it worked well?**

**What would you like to change in your final model?**

**What will you do differently next time you do a challenge like this?**