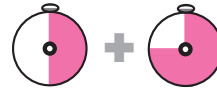


# I'll huff and I'll puff



30 mins + 45 mins



In the first session, children listen to the story of 'The Three Little Pigs' and discuss the pigs' choice of building materials. In the second session, they make puffing machines and test which materials can be moved by a puff of air.



## At a glance

### Session 1

- Read 'The Three Little Pigs'. Discuss the building materials used by the pigs and the effectiveness of each.
- Display and discuss the possible effectiveness of selected materials.
- Compare two materials in an unfair test and discuss ways of conducting a fair test.
- Demonstrate a puffing machine.

### Session 2

- Children make a puffing machine and test it.
- Children plan how to use their puffing machine to carry out a fair test.
- Children carry out the test and record their results.

### Engage



### Explore





## Lesson outcomes

- 1 Children are aware of some properties of materials.**  
They show their awareness by sorting materials according to whether the materials were moved by a puffing machine.
- 2 Children are aware that tests for properties of materials should be fair tests.**  
They show their awareness by using their puffing machines in the same way for each material tested.



## Equipment and preparation

### Session 1

#### For class discussion

1 copy of 'The Three Little Pigs'

#### For class demonstration

1 container (eg, paper bag), holding materials for testing (eg, a cotton ball, pieces of foam rubber, aluminium foil, paper, a popstick, some straw (or dried grass) and a stone (large enough not to be swallowed)

1 puffing machine (see Preparation)

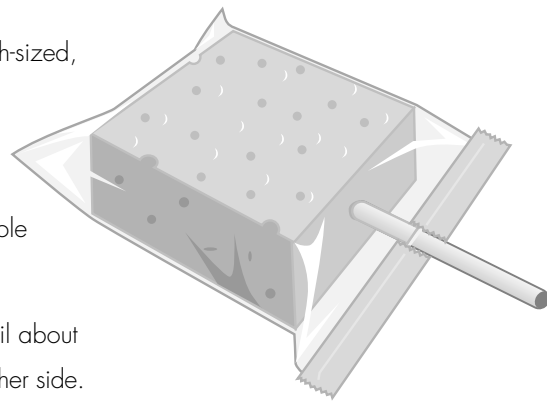
#### Preparation

Collect materials. (Each team will need a set of these materials in Session 2.)

To make a puffing machine you will need:

- 1 piece of sponge (about 11 x 11 x 5 centimetres)
- sharp scissors
- 1 plastic straw
- 1 resealable plastic bag (sandwich-sized, about 18 x 16 centimetres)
- masking tape

*The sponge must fit snugly in the bag. ('Softy all purpose sponge', made by Edco, works well.)*



- Use a pair of scissors to make a hole through the middle of the sponge.
- Push the straw through the hole until about one centimetre of it shows on the other side.
- Put the sponge and straw into the bag.
- Seal the bag firmly with tape on either side of the straw to ensure that air can only escape through the straw.
- Operate the puffing machine by making a quick, forceful push on the sponge.

## Session 2

### For each team

- 1 piece of sponge
- 1 plastic straw
- 1 resealable plastic bag
- masking tape

*For puffing machine*

*Managers will find it easier to collect the equipment if you put the items for each team into a separate container.*

- small pieces of crumpled paper
- 1 container of materials (as for demonstration in Session 1)
- 1 worksheet, 'Dear pigs' (BLM 2.8)
- job badges for manager and speaker

### Preparation

Use a pair of scissors to make a hole in each team's sponge.

**BLM** Make one copy of 2.8 for each team.



## Teaching strategies

### Session 1

- 1 Set the scene by reading or telling the story of 'The Three Little Pigs'. Focus attention on the building materials used by the pigs.

**What happened to the houses of the first and second little pigs?**

**What was different about the house of the third little pig?**

**What other things could the three little pigs have used to build their houses so that the wolf could not blow them away?**

- 2 Display the materials in the container, one at a time.

**Which of these materials could the little pigs use to build a house that won't blow away?**

**Which ones shouldn't they use?**

**How did you decide?**

- 3 Invite two children to do an experiment to test the class predictions. Ask both children to kneel in front of a desk. Put one of the items from the container in front of one child, at a distance of about 20 centimetres; put a second item about a metre in front of the other child. Ask the two to blow on the objects to try to move them.

- 4 Ask for comments about the fairness of the test.

**Was this a fair test?**

**In what way was it unfair?**

**How could we make this a fair test?**

Accept suggestions and then explain that the children will make something to help them carry out a fair test.

*Help children to understand that, in order for the test to be fair, the objects should be the same distance from each child and the blowing should be of the same strength from each child.*

- 5 Demonstrate your puffing machine and explain that in the next session teams will make their own puffing machine and they will use it to carry out a fair test. The test will show which materials can and cannot be moved by a puff of air.

## Session 2

- 6 Demonstrate your puffing machine again and remind children that they are going to make their own.



Pair children and allocate jobs.  
Ask managers to collect team equipment.

- 7 Show children how to make a puffing machine.
- 8 When children have finished making their machines they can test their effectiveness with the small pieces of crumpled paper.
- 9 Explain that teams are going to use their puffing machine to sort their bag of materials into two groups—those that can be moved by a puff of air from the machine and those that can't. Allow time for partners to discuss setting up a fair test.

*Teams may need help to seal the bags correctly.*

*Because this is a team task, partners need to agree on a plan before proceeding. Children should indicate that a fair test requires that each material be tested in the same way for every test. They will need to decide how close to place each material, how long to wait after each test before reactivating the machine and how many times to test each material.*

- 10** Ask children to take turns using their team's machine to test each material.

Some of the materials will move more easily than others. If a material moves at all, the children should place it in the group of those that moved.

- 11** After teams have tested and grouped all their materials, collect the puffing machines and keep them for Lesson 16. (Puffing machines should be labelled with names of team members.)

- 12** Ask: **Which property did your team use to sort the materials?**  
**From which group should the pigs choose materials to build houses?**

*If necessary, explain that the pigs should build houses out of the materials that were not moved by a puff of air.*

- 13** Distribute the worksheets and explain how children should record the results of their fair test. 🌀

# Dear Pigs

Name: ..... Name: .....

Dear Pigs,

These things moved when we tested them with our puffing machines. Do not use them to build your house.



Dear Pigs,

These things did not move. Use them to build your house.

