

## Balancing Balloons

*Approach:* One to one

*Level:* Year 4

*Focus:* Understanding that air has mass, takes up space, and is more dense when compressed.

*Resources:* Video showing steps of the experiment.

### Questions/instructions:

This activity starts with a video. The video shows an experiment with balloons placed on a balance.



**Show video clip 1, 2 uninflated balloons on balance.**

- |  | <i>% responses</i> |
|--|--------------------|
| 1. What happened when the balloons were put on the balance?  | 91                 |
| 2. Why did that happen?  | 64                 |
| 3. If one of the balloons on the balance is blown up and the other one isn't, what do you think will happen? | 59                 |
| ✓ blown up one will tip scale down   | 4                  |
| they will still balance  | 32                 |
| blown up one will rise   |                    |

- |  | <i>% responses</i> |
|--|--------------------|
| 4. Why do you say that?  | not marked         |
| <b>Show video clip 2, one balloon inflated one not.</b>                                | y4                 |
| 5. What happened when the balloon that was blown up was put on one end of the balance? | 98                 |
| 6. Why did the balance go down on one side?  | 1                  |
| compressed air is denser than less compressed air                                      | 46                 |
| air has weight   |                    |
| 7. What does this experiment tell us about air?  | 2                  |
| under greater pressure, air is condensed (more weight in same volume)                  | 57                 |
| air has weight / takes up space  |                    |

### Commentary:

The proper explanation for the key feature of this task was beyond the knowledge of almost all of the year 4 students. However, many students made good predictions and gave partial explanations.