

Name _____	Date _____
Unit _____	Lesson _____

1. Write True or False and correct the false statements.

- a) Upthrust is a non-contact, push force which pushes objects in the air and water up.
- b) Upthrust is the opposite of gravity, gravity pulls an object down and upthrust pushes it up.
- c) The mass and weight of an object influences the amount of upthrust.
- d) Archimedes, an Ancient Greek scientist, discovered upthrust in his bath over 2000 years ago.
- e) Archimedes discovered that the water an object uses has an upwards force.

2. Write a 'X' on the examples that occur because of upthrust.

- | | |
|---|---|
| <input type="checkbox"/> we can swim | <input type="checkbox"/> a hot air balloon rises |
| <input type="checkbox"/> a footballer kicks the ball | <input type="checkbox"/> a parachute rises and slows the fall |
| <input type="checkbox"/> boats don't sink | <input type="checkbox"/> a bottle floats |
| <input type="checkbox"/> a ball is thrown into a basket | <input type="checkbox"/> a leaf falls to the ground |
| <input type="checkbox"/> a sponge changes shape | <input type="checkbox"/> fruit floats in punch |

3. Draw, label then write.

- a) Draw a diagram of an object that floats on water. Label with force arrows \uparrow = upthrust, \downarrow = weight (the more arrows the more force). Explain why it floats.

- b) Draw a diagram of an object that sinks. Label with force arrows \uparrow = upthrust, \downarrow = weight (the more arrows the more force). Explain why it sinks.

1. Write True or False and correct the false statements.

- a) Upthrust is a **non-contact**, push force which pushes objects in the air and water up.
Upthrust is a **contact**, push force which pushes objects in the air and water up.
- b) Upthrust is the opposite of gravity, gravity pulls an object down and upthrust pushes it up. **True**
- c) The mass and **weight** of an object influences the amount of upthrust. **False**.
The mass and **volume** of an object influences the amount of upthrust.
- d) Archimedes, an Ancient Greek scientist, discovered upthrust in his bath over 2000 years ago. **True**.
- e) Archimedes discovered that the water an object **uses** has an upwards force. **False**.
Archimedes discovered that the water an object **displaces** has an upwards force.

2. Write a 'X' on the examples that occur because of upthrust.

- | | |
|---|--|
| <input checked="" type="checkbox"/> we can swim | <input checked="" type="checkbox"/> a hot air balloon rises |
| <input type="checkbox"/> a footballer kicks the ball | <input checked="" type="checkbox"/> a parachute rises and slows the fall |
| <input checked="" type="checkbox"/> boats don't sink | <input checked="" type="checkbox"/> a bottle floats |
| <input type="checkbox"/> a ball is thrown into a basket | <input type="checkbox"/> a leaf falls to the ground |
| <input type="checkbox"/> a sponge changes shape | <input checked="" type="checkbox"/> fruit floats in punch |

3. Draw, label then write.

- a) Draw a diagram of an object that floats on water. Label with force arrows \uparrow = upthrust, \downarrow = weight (the more arrows the more force). Explain why it floats.

\downarrow
 object
 \uparrow

Balanced forces. The weight of the _____ is equal to the upthrust.

- b) Draw a diagram of an object that sinks. Label with force arrows \uparrow = upthrust, \downarrow = weight (the more arrows the more force). Explain why it sinks.

$\downarrow\downarrow$
 object
 \uparrow

Unbalanced forces. The weight of the _____ is greater than the upthrust.