

# Solutions, mixtures and suspensions (Chemistry)

## God is Pure and Holy

### Spiritual Awareness: God cleanses us from sin

Water is a symbol of purity. When water is mixed with impurities, it can be filtered or evaporated to its pure form.

God is pure and He wants His children to be pure. We can never be pure in God's sight by trying to be good. Only the washing away of sin after repentance can make us pure in God's sight.

### Our response to 'God is Pure and Holy'

Because God is Pure and Holy I will...

- Obey Him.
- Try to do the things He wants me to do.
- Ask God to forgive me when I sin.
- Ask Him to make me clean inside.
- Admit when I make mistakes.
- Remember the fruits of the Spirit and try to show them in my life.
- Have respect for other people.
- Put God first in my life.

### Supporting devotional resource

*Themes Level for Christian Studies 2, (Pure): God is pure because He is without sin.*

### Biblical references

Genesis 6-8: The world was purified by a flood.

1 John 1:9 - If we confess our sin God will forgive us.

Psalm 51:1-7 - Wash me and I shall be whiter than snow.

Isaiah 1:18 - I will wash you as clean as the snow.

Psalm 145:17 - The Lord is righteous in everything He does.

1 Peter 1:19; Hebrews 9:14 - Jesus was without sin.

Isaiah 43:25 - I am the God who forgives your sins.

Matthew 9:1-7 - Jesus not only healed the paralyzed man but forgave his sin.

John 4 - Jesus forgave the sins of the woman at the well.

John 18 - 19 - Because Jesus was without sin He was able to die for us.

Exodus 30:17-21 - Those presenting an offering had to wash their hands for purity.

### Key Questions

Why does God choose water to remind us of purity?

Which people in the Bible did Jesus forgive?

Why is Jesus able to forgive us for our sins?

Why do we need to ask Jesus to forgive us for our sin?

Could anyone get to Heaven by just trying to be good?

## **Objectives**

Students will

- demonstrate a variety of methods for removing sediment from water
- identify solutions, suspensions and mixtures
- explain why solid particles may float or sink

## **Activities**

- Test substances and materials to see whether they float or sink in water.
- Make a mixture and a solution. Define each.
- Evaporate salty water and collect condensation. Taste the condensed water.
- Mix salt or sugar in hot and cold water. Compare dissolving times.
- Repeat experiment with stirring.
- Investigate what mass of sugar or salt can be dissolved into a given volume of water.
- Mix soil with water, Suggest ways of purifying the water.
- Experiment with straining, filtering and sedimentation and decantation, to separate water and sediments.
- Repeat the experiment with other mixtures e.g. sand and water; wood chips and water; iron filings and water
- Decide on the best method of purification for various mixtures or solutions. Record results in table form.
- Suggest ways of purifying water that contains organic contaminants.
- Examine a sample of tank or pond water under a microscope to note presence of living organisms, then re-examine it after boiling it. Repeat the experiment using water purification tablets.
- Discuss importance of pure drinking water.
- Find out the location of reservoirs or rivers supplying local water.
- Find out how local water is purified.
- Find out what happens to household water once it leaves the home.
- Find out what happens at sewage treatment plants, and the reasons for sewage treatment.