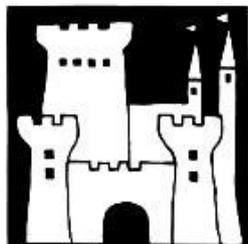


Science and Social Studies

Year 5 Term 4

Student Book

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God is Protector – The History of Shelter

Whoever dwells in the shelter of the Most High will rest in the shadow of the Almighty. Psalm 91:1

History of shelter 1: The First Homes

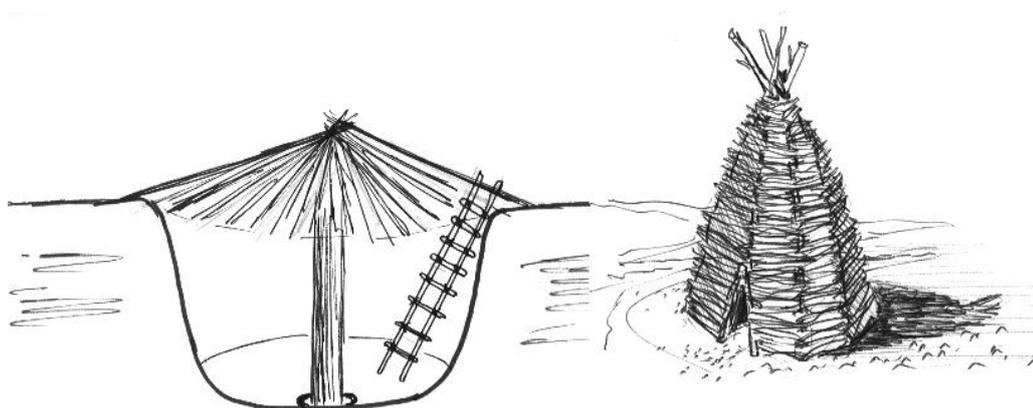
Most people, who do not believe the Bible, imagine that the first people were a kind of half man, half ape, living in caves and having little intelligence. However, Christians know that there were never such beings as ape-men, and that people were created with the same intelligence that people have today.

It is true that some people did live in caves because we see their paintings on the walls, but these people as intelligent as people today. Early people were also able to build structures out of the materials they found around them. Noah, who lived on earth 1500 years after the creation, was capable of building a huge and wonderful boat, capable of staying afloat for 40 days. The people of Babel, who we read about in Genesis 11, were capable of building an enormous tower.

Archaeologists are people who look for things from the past. Some have found remains of early types of dwellings. They have found evidence that people in early times built pit dwellings. To make pit dwellings, holes were dug in the ground and covered with logs, placed horizontally over the hole. Then earth was heaped on top.

Remains of other types of dwellings have also been found. It seems that in early times, people used materials like wooden posts, reeds, leaves, mud and animal skins.

Draw and label 3 types of early homes.

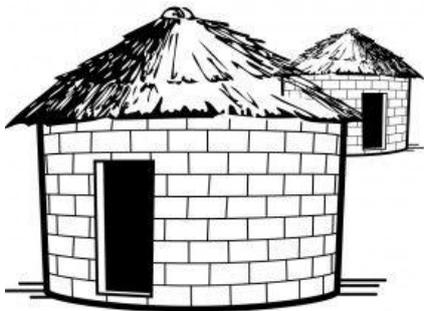


History of Shelter 2: Desert homes

Desert homes must perform two functions. They shield the interior from intense daily heat, and must also store that heat for use during the cool nights. The best material for this is heavy clay or mud, moulded and baked into bricks. Mud bricks slowly absorb the sun's rays during the day, preventing the heat from penetrating the interior of the home. Then, during the cold night, the warm bricks radiate their stored heat and keep the interior warm. There is evidence that mud bricks were used in hot desert areas all around the world.

Another type of desert home is the tent. Tents were used by nomadic people. These are people who move around from place to place. A tent can be taken with you wherever you go. The desert tents, like those of the Arabs, usually have broad canopies over the doorways, to lessen the effects of the sun and wind. Tents were originally made from animal hides which were sewn together. Tents were used by many people around the world, including the American Indians.

1. Why are mud bricks such an effective form of shelter in desert regions?
2. Why were tents a suitable form of shelter for nomadic people?
3. Draw a tent belonging to an Arab from a nomadic tribe. Label your drawing to show the main parts of the tent and the materials used.
4. Compare a camping tent of today with traditional tents. What do they have in common?



History of Shelter 3: Eskimo homes

Eskimos live in the arctic, in the far north of the world. Most live in Alaska, the northern most state of the U.S.A. The arctic climate is harsher than any climate in the world. The only building material available to traditional Eskimos was the snow itself.

The Eskimos, using a semi-circular snow knife, used to cut long flat blocks of snow and arranged them in an ascending spiral, that became smaller and smaller at the top, forming a dome. The igloo was built from the inside. Cutting blocks from around his feet, the Eskimo would lower the floor level as the dome rose above him. When the igloo was finished, more than half was below the surface. A small tunnel was connected to the igloo. This is where the sled-dogs sheltered. A small hole was left at the top of the igloo to provide ventilation, and to allow smoke to escape.

The inside of the igloo was warm, keeping out the outside cold and wind. Seal oil-lamps provided light and warmth. Blocks of ice were cut for furniture, and covered with animal skins. The temperature of the inside of the igloo was much higher than the temperature outside. The dome shape was excellent for the arctic conditions as the howling winds only swirled around the smooth shape and did no damage.

Today most Eskimos live in modern times live in houses equipped with the usual amenities.

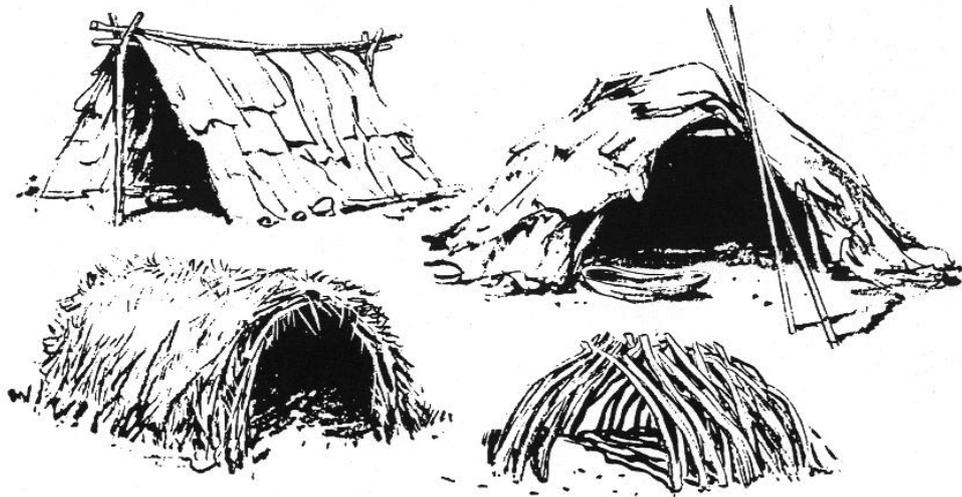
1. Where do most Eskimos live?
2. Draw a picture of an igloo. Include the details you have read about in the text.
3. How did the Eskimo get the floor level to be lower than the ground outside?
4. What was the small tunnel for?
5. Why was there a small hole at the top?
6. What was the igloo like inside?



History of Shelter 4: Early homes of Australian Aboriginal people

The Australian Aboriginal people moved around from place to place. They understood the land, and never mistreated it. They would never take all the food plants from one place, but left some so there were enough seeds to produce more plants. Their homes were easily built from the materials around them, like bark, grass and sticks. When they moved on, they simply built new homes. Australian Aboriginal people now live in permanent homes made of modern building materials.

Draw and write a description of some of the early Australian Aboriginal homes.



History of Shelter 5: Traditional Fijian homes

Bure is the Fijian word for a wood-and-straw hut.

The traditional Fijian people built bures out of the materials around them. The materials were either stacked together, tied together by rope, or a both. Bures were for the men.

The other type of house was the vale. This was the family house. Both of these buildings were dark and smoky inside, often with no windows and usually only one low door. Vales had hearth pits where the women cooked. The packed earth floor was covered with grass or fern leaves and then carpeted with pandanus leaf or coconut leaf mats.

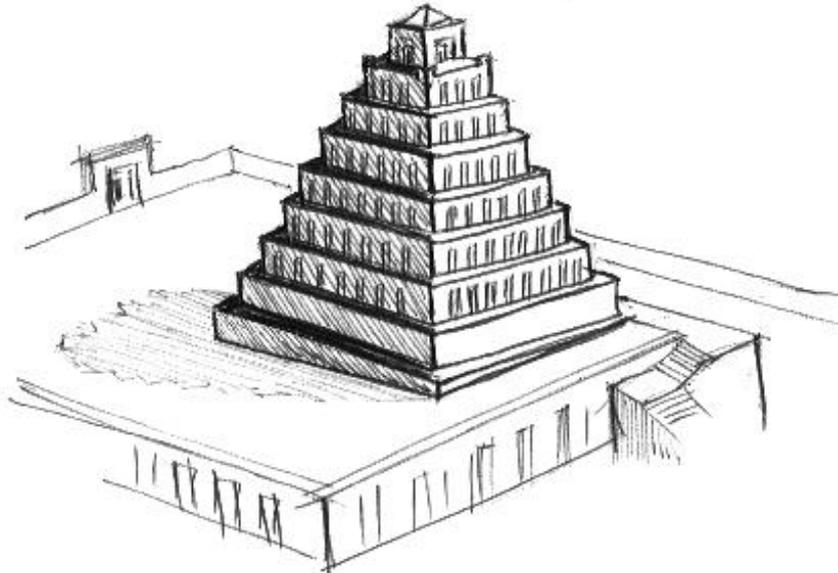
1. Make a list of 5 materials that you might use when building a bure.
2. There were no nails or screws, so how did the bures hold together?
3. Who used the bures?
4. What was the family home called?
5. What is a hearth pit?
6. Describe the floor of the vale.



History of Shelter 6: The Tower of Babel

(Babylon, now Iraq)

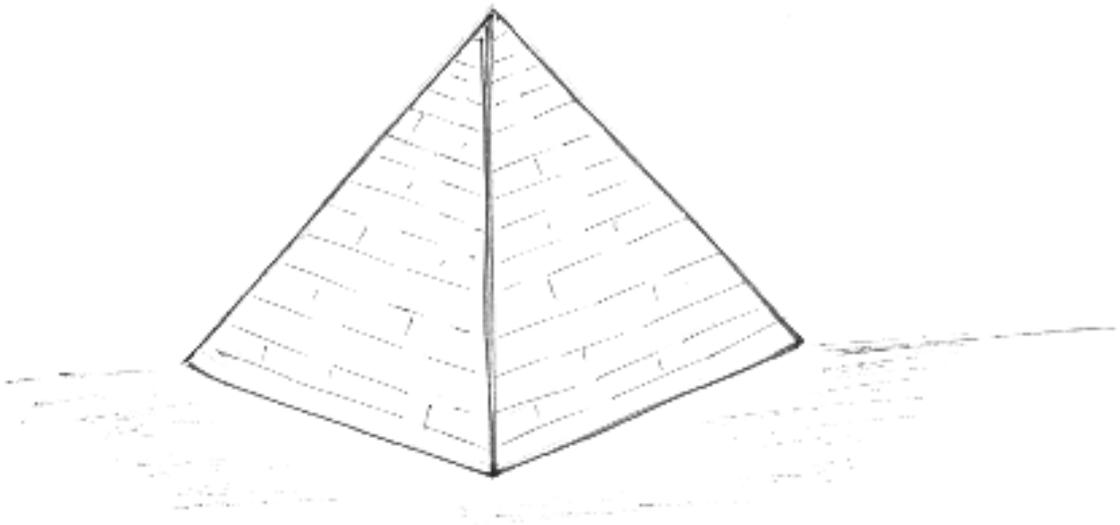
You can read about this tower in Genesis 11. It was built by the descendants of Noah, who thought they were so great that they could reach heaven. God saw their proud hearts and put a stop to the building by confusing their languages. Because they suddenly spoke different languages, they couldn't communicate with one another to finish the building project. It is believed that the tower was a 90 metre high stepped pyramid called a ziggurat.



1. Draw the Tower of Babel.
2. Why was the Tower of Babel built?
3. Why wasn't it finished?

History of Shelter 7: The Pyramid of Giza (Egypt)

Like the people who built the tower of Babel, the Egyptians also wanted to build tall structures to get closer to heaven. The Egyptians worshiped false gods. They buried the pharaohs in the pyramids, along with their treasures, and food for their next life. Without steel or concrete, the only way of building high in ancient times was to pile stone blocks on top of one another. Slaves were used to haul the huge stone blocks. God's people, the Israelites were slaves to the Egyptian pharaoh at the time, but God chose Moses to set them free. The Great Pyramid of Giza was completed about 2550 BC and was 146 metres high.



1. Draw the pyramid of Giza
2. Why did the Egyptians bury the pharaohs with food and treasure?

History of Shelter 8: The Colosseum (Rome, Italy)

About 2,000 years ago, the city of Rome was at the heart of a vast empire. The Romans built huge arenas called amphitheaters. Men called gladiators fought each other or wild animals, while people watched. Sometimes Christians were put in the arena with wild animals. The Colosseum, in Rome, was the biggest amphitheater they built. It had room for about 50,000 people. The Romans sometimes flooded the Colosseum and watched ships fighting each other in sea battles.

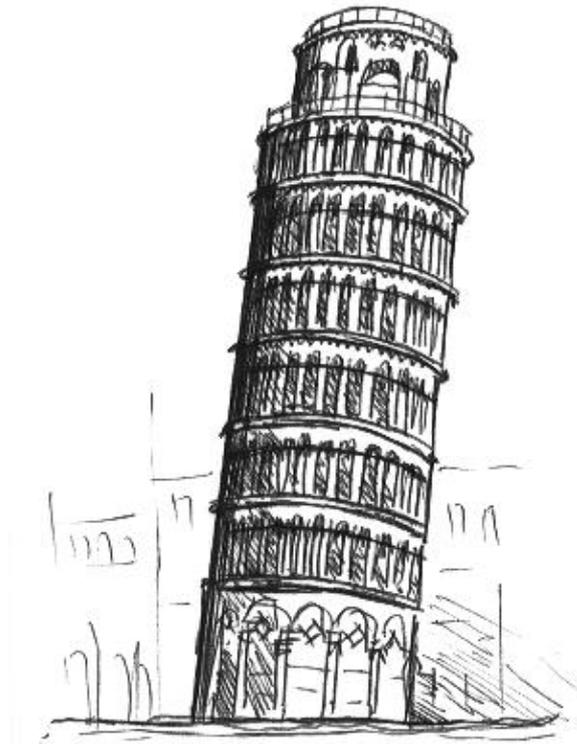
The Colosseum had three layers of arches and the arena was oval shaped. There were about 80 entrances, and tickets had the right entrance number stamped on them. Slaves and women sat on wooden benches at the back. The other seats were marble.



1. Draw the Colosseum.
2. What was it used for?
3. What did the Roman government do to Christians?

History of Shelter 9: The leaning tower of Pisa (Italy)

The 55 metre-high leaning tower of Pisa in Italy was built between 1174 and 1350. Unfortunately, it was built on soft ground without proper foundations. As a result, the soil has settled unevenly, making the tower lean about 5 metres towards the ground.



1. Draw the leaning tower of Pisa.
2. Why is it leaning?

History of Shelter 10: The Eiffel Tower (Paris, France)

Alexandre Gustave Eiffel, a French engineer, was one of the first to realise the great possibilities that iron had in building. Using iron was the first step to building skyscrapers. Eiffel made the highest iron building ever, for the Paris exhibition in 1889. It was 300 metres tall.

1. Draw the Eiffel Tower
2. Why was the Eiffel tower built?
3. What was it made from?
4. What did people learn from the building of the Eiffel Tower?



History of Shelter 11: Some important building structures

Engineers are people who work out the strength of a building. They must understand the strength of the materials and the forces that will make a building stay upright. Bridges, towers, domes, arches are some of the structures built by engineers.

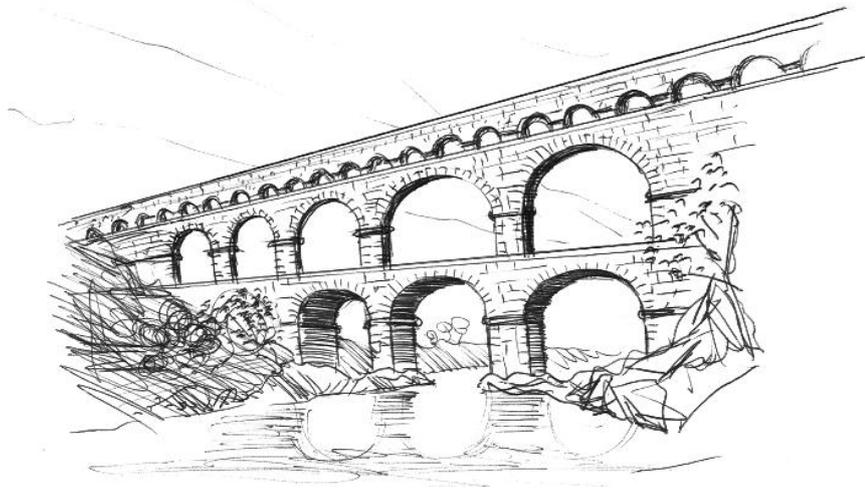
Arches

The Romans were the first to use the arch. They put an arch shaped wooden frame on top of two stone pillars. Stones were tightly packed together around the frame. Sometimes a wedge-shaped stone at the top held the other stones in place. This was called a **keystone**.

The arch is a very strong shape. It can support a heavier weight than a post and beam.

The Romans also used arches for strength in the building of aqueducts. An aqueduct is a canal built on top of a bridge made of arches. The series of arches support the canal of water above.

1. Why do builders use arches?
2. Draw pictures of buildings that have arches.



History of Shelter 12: More important building structures

Roof frames

Making a strong waterproof roof can be the most difficult part of building a house. Flat roofs often leak. A sloping roof works better because the water runs off, but the roof must be strong enough to support the weight and stand up to high winds.

Triangles

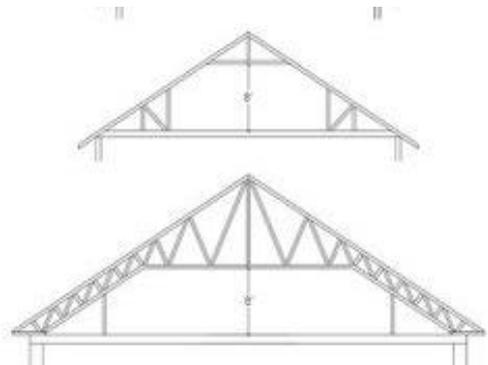
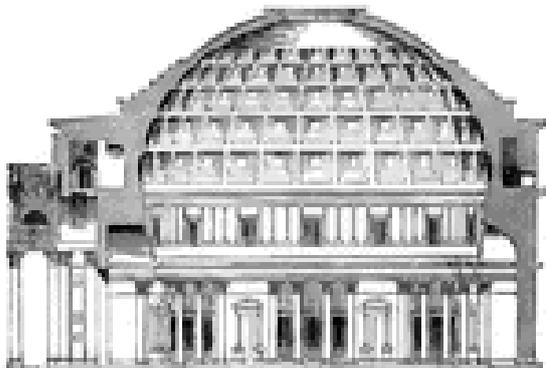
If we look around us, we will see that many structures are triangular in design. Unlike the square frame, the triangular frame is rigid and will not change its shape.

Domes

It was the Romans who learned to make domes. They made a frame from wood and poured concrete over the wooden moulds. When the mixture dried, the framework was taken down.

The top of the dome was made of a slightly different mixture to make it lighter. At the top of the dome was a window called the *eye*. The dome was very strong.

1. Draw and describe the best kind of roof to keep the rain off.
2. Draw a building with a dome shaped roof.
3. What are some dome-shaped things that we use?



Brother Andrew

Biography

Many people today show bravery in serving God. Some people face dangers as they take His word to places where it is forbidden. They must trust God to protect them. Brother Andrew is a person who has served in such places.

Andrew, son of a blacksmith, grew up in a typical Dutch town. Living in Holland, a free country, Andrew had great concern for people in countries where the gospel could not be preached. Some of these countries were Russia, Hungary, Albania and China. In those days, the Socialist government did not allow religious freedom.

When Andrew grew older he conducted missions to these countries. With his car packed with Bibles, concealed in all sorts of secret compartments, he would drive his car through border crossings. As he did, he prayed that the Lord would 'close the eyes' of the border guards. God did it time and time again.

Here is a story about one of Andrew's experiences. He had just made it through the Hungarian border without being caught. God had again made seeing eyes blind. He drove on through the beautiful country side which followed the River Danube. He started to feel hungry so decided to stop for some lunch. He drove down a sandy lane and stopped at a little clearing at the water's edge. In order to get to the camp stove, Andrew had to move several boxes of gospel literature that the guards had just overlooked. No sooner had he opened the can of peas and carrots when he heard the roar of a speed boat approaching. The boat was heading towards Andrew at full throttle. In the bow, stood a soldier with a drawn machine-gun. At the last possible instant the boat swerved and coasted to a neat landing at the river's edge. Andrew now saw that there were two other soldiers in the boat. The man in the front leapt ashore followed by another one. "Lord," Andrew prayed, "help me not to be afraid."

The first soldier kept the machine-gun on Andrew while the other ran to the car. Andrew kept stirring the peas and carrots as he heard the car door open. "Well," said Andrew, "it is certainly nice to have you drop in this way. Would you care to join me?"

Andrew reached into his picnic box and drew out two extra plates. He motioned to the soldier to come and sit down. The soldier stared stonily and shook his head, as if to say, "I'm not going to be bribed." Andrew could hear the other soldier poking around. Any moment now he was going to ask about those boxes.

"Well," said Andrew, "if you don't mind, I'm going to go ahead and eat while the food is hot."

Andrew bowed his head and prayed. Then an amazing thing happened. While he prayed there was no sound from the soldier inspecting his car. Just as soon as he had finished praying, the door slammed. Andrew heard the sound of footsteps coming rapidly towards him. He picked up his fork and started to eat. For a moment both soldiers stood over him. Then abruptly they whirled around. Without looking behind them, they ran down to their boat, jumped in, and roared off in a spray of white. That was the last he saw of them.

Brother Andrew Activities

1. Name some of the countries that Andrew went to.
2. Why did he want to go to these countries in particular?
3. What miracles did God do for Andrew, to enable him to get Bibles into these countries?
4. Why would you say that Andrew showed great courage?
5. What do you think could have happened to Andrew if he had been caught?
6. Write about a time when God has protected you, or someone close to you.

Irena Sendler

(1910 – 2008) Poland

Biography

When World War 2 broke out in 1939, Irena Sendler was a 29-year-old social worker, employed by the Welfare Department of Warsaw, Poland. After the German occupation, the department continued to take care of the great number of poor people in the city.

Irena Sendler took advantage of her job in order to help the Jews. However, this became practically impossible once the ghetto was sealed off in November 1940. About 400,000 people had been driven into this small area of housing. The poor hygienic conditions in the crowded ghetto, the lack of food and medical supplies resulted in epidemics such as typhoid, and the high death rates were high.

Irena Sendler worked out a way to get into the ghetto and help the dying Jews. She managed to obtain a permit from the council that enabled her to enter the ghetto to inspect the sanitary conditions. Once inside the ghetto, she made contact with a network of people who wanted to help the Jews. She helped smuggle Jews out of the ghetto and helped set up hiding places for them.

Knowing that the ghetto was soon to be destroyed, and the Jewish residents to be sent to concentration camps, (or death camps), she convinced Jewish parents to give up their children so that the children could be saved. Irena found Polish Christian families who were willing to adopt Jewish children. These families would take the Jewish children in as their own children, until after the war was over. If their parents were still living at the end of the war, they would be returned to their parents. In order to make sure of the location of each child, Irena secretly kept each child's name and location on pieces of paper which she placed inside glass jars. She then hid the jars in the ground so that the Nazis would not discover their identity.

Once the ghetto was destroyed, Irena turned her attention to work as a nurse. She used her job as a nurse to rescue Jewish children. Using an ambulance, a child could be taken out hidden under the stretcher. if a child could pretend to be sick or was actually very ill, they could be legally taken away using the ambulance.

Sometimes a trolley was used to carry out children hiding in a sack, a suitcase or something similar. Some children were taken out through secret underground passages.

For each child she rescued, she made false identity papers for them, and gave them a new Polish name. This meant that the children had to practice their name and not use their Jewish name. She dressed the children in smart clothes, unlike the poor clothes they were wearing in the ghetto, so that they would look like Polish children and not Jewish children.

In 1943 her activities were discovered and she was arrested, along with her friends who were helping her. Anyone found assisting Jews would normally be shot. Irena's friends were shot, but the Nazis did not want to kill Irene before they found out the information on where the Jewish children were hiding. Irena would not give them any information, even though she was tortured, her legs and feet bashed so that she could not walk.

Irena had a close Jewish friend, who was able to get her out of prison by bribing one of the guards. She was able to escape and stay safe until the end of the war, when some children could be reunited with their parents. However, sadly, many parents were killed in the concentration camps. Altogether Irena was able to save 2,500 children.

On October 19, 1965, Yad Vashem, a world Holocaust remembrance centre in Israel, recognized Irena Sendler as *Righteous Among the Nations*. The tree planted in her honor stands at the entrance to the Avenue of the *Righteous Among the Nations*.

Trouble for the Jews throughout history

Throughout history, the Jews have been under attack. Satan knows that God has a special plan for the Jews in the future history of the world. Satan does all he can to stop God's plan, and he will do so until one day he will be thrown into the lake of fire and destroyed.

Throughout history Satan has worked through various people, to try to destroy the Jews. Hitler has so far been the most evil of these. He murdered around 6 million Jews in an event in history called the Holocaust.

Although the Jews have suffered much, they have not been destroyed, and after World War 2 those who survived the Holocaust returned to the Middle East to reclaim their own land, Israel. God's plans cannot be destroyed by Satan, God, in His wisdom, has used the willing hearts of Christian people, such as Irena Sendler, to fight for the Jews. God used Christians to save many Jews during the Second World War.

The historical story of Esther in the Bible is another example in history where God stepped in to save His people. Jews still remember this event today by holding a special thanksgiving feast each year called Purim, where children dress up as characters from the story, and everyone eats special triangular pastries filled with honey are eaten to celebrate the Jew's victory.

1. What was the Holocaust?
2. What nationality was Irena Sendler?
3. How did she help Jewish children during World War 2?
4. What was her plan for reuniting the children with their parents after the war?
5. How did she escape death from the Nazis?
6. Write a couple of paragraphs telling the story of Esther in the Bible.

God is Truth – Gravity and Pendulums

In the creation of the universe, God has set laws in motion that are constant and will never change. Like the laws of science that God has put in place, God's word, which is the only truth, never changes.

Gravity and pendulums 1

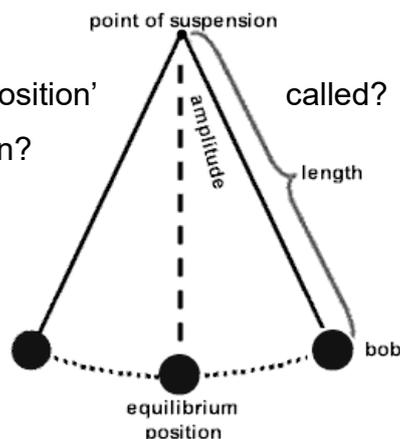
What is a pendulum?

A *pendulum* is a weight suspended on a string (or wire) so that it can swing freely. The weight is called a 'bob'. When a pendulum is set into motion sideways from its resting position it will always go back to its resting position. The bob goes back to the resting position because of the force of gravity.

The resting position is called 'the point is equilibrium'. To get back to its point of equilibrium the pendulum swings back and forth. This is called 'oscillation'. We say that the swinging pendulum is 'oscillating'. The distance the pendulum covers while oscillating is called 'amplitude'.

The time for one complete cycle, (a left swing and a right swing), is called the *period*. The time for one complete period depends on the length of the string.

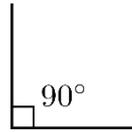
1. What is a 'bob'?
2. What is the 'resting position' called?
3. What does 'oscillating' mean?
4. What is a period?



Gravity and pendulums 2

The earth's gravity and pendulums

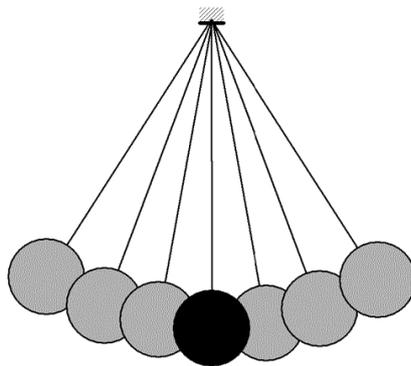
The Earth's gravity attracts the 'bob' of the pendulum. When the bob is hanging still, the string is hanging straight down at a 90-degree angle to the Earth. This is because gravity is pulling the string and the bob to the Earth. The pendulum will stay there at rest until a force causes it to move.



When the pendulum is set into motion, it keeps moving, unless there is a force that acts to make it stop.

Gravity works on the pendulum while it is moving. The force of the movement becomes less as the force of gravity acts on the pendulum. The pendulum slows down. Finally the bob returns to the starting point and the pendulum is still once again. The force of gravity pulls the pendulum down toward the Earth.

Why does a swinging pendulum finally stop?



Gravity and pendulums 3

What are pendulums used for?

Pendulums are used to regulate pendulum clocks, and are used in scientific instruments such as accelerometers, (which measure how fast things go), and seismometers, (which measure the strength of earthquakes). The word 'pendulum' comes from the Latin word *pendulus*, meaning 'hanging'. A swing is a pendulum. A Tarzan rope is a pendulum.

Task

Draw and label some things that work on the principle of the pendulum.

How do you make a pendulum?

A simple pendulum can be made with a string and a weight hung from a single point. Other material can be used for the string, such as a rod or wire.

Task

Draw a pendulum that you could make.



Gravity and pendulums 4

Do pendulums with different bobs swing at different rates?

The weight, (the bob), can be of any weight. It doesn't matter if the bob is heavy or light. Gravity will cause pendulums to swing at the same rate. However other forces such as wind or pushing can vary the rate. Think of a swing. If you lift the swing and let it go, and then walk away, it will act as a pendulum and gradually come to a stop. But if someone pushes the swing then it may go higher, depending on the strength of the push.

Task

Why do pendulums swing at the same rate?

What could vary the rate?

Gravity and pendulums 5

Who discovered the law of the pendulum?

The science of the way pendulums swing was discovered by Galileo Galilei in 1602. As a result of Galileo's discovery, pendulums were used for accurate timekeeping technology until the 1930s. Galileo Galilei was born in Pisa, Italy on February 15, 1564. He was the oldest of seven children. His father was a musician and wool trader. In those days parents often chose the occupation their children would follow. His father wanted him to become a doctor so that he could earn a lot of money, but Galileo wanted to become a monk. A monk was someone who dedicated their life to prayer and learning about God. He went to a school that was run by monks and here he developed a strong faith in God and marveled at the creation...especially the mathematical laws that held the universe together.

Although Galileo was not able to serve God by becoming a monk, he did serve God in another way. His keen interest in science and mathematics led him to make remarkable discoveries that changed the world, including the law of the pendulum.

Who discovered the law of the pendulum?

What were pendulums used for?

Gravity and pendulums 6

Galileo's discoveries: telescope and pendulums

One of Galileo's discoveries was the telescope, which he used to prove that the earth was not the centre of the universe. He discovered that the earth and other planets in our solar system travel around the sun. This was a new idea and different to what had been previously believed. Galileo also invented the thermometer and made some important discoveries about gravity.

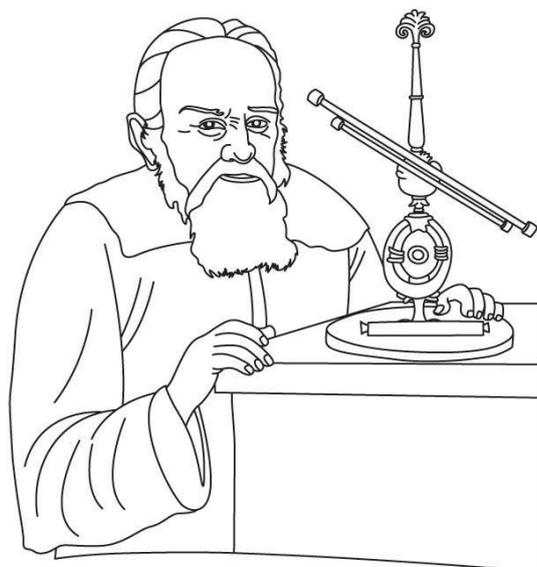
At age twenty, Galileo noticed a lamp swinging overhead while he was in a cathedral. Curious to find out how long it took the lamp to swing back and forth, he used his pulse to time large and small swings. Galileo discovered something that no one else had ever realized: the period of each swing was exactly the same. (The period is the time in which a pendulum takes to return to the position it was in at the beginning.)

Galileo also noticed that the period of the pendulum is not dependent on the material from which it is made or on its weight. The pendulum's period is influenced by its length alone. The longer the pendulum string, the longer its period.

What did Galileo discover about the universe?

How did Galileo become interested in pendulums?

How did he find out that pendulums have a constant period?



Gravity and pendulums 7

Galileo's famous discovery about gravity

At the time that Galileo arrived at the University, some debate had started up on a "law of nature", that had been believed by an earlier scientist, Aristotle. The belief was that heavier objects fell faster than lighter objects. Aristotle's word had been accepted as gospel truth, and there had been few attempts to actually test Aristotle's conclusions by actually conducting an experiment!

Galileo decided to try. He needed to be able to drop the objects from a great height. The perfect building was nearby: the Tower of Pisa, 54 meters high. Galileo climbed up to the top of the building carrying a variety of balls of varying size and weight, and dumped them off of the top. A huge crowd of students and professors stood at ground level, eager to see the result. They all landed at the base of the building at the same time. Galileo had proved that Aristotle was wrong!

Question: *What is the connection between Galileo's discovery on the Tower of Pisa and the principle that different weights of bobs swing at the same rate?*

Gravity and pendulums 8

About truth

There were many times in Galileo's life when he had to stand up for the truth. People were not willing to change from their old ideas, that the earth was the centre of the universe. Galileo proved earlier scientists wrong with his new discoveries. Life was not easy for him and he was faced with much opposition.

Christians know the God of all truth, and we can look to His book, the Bible, for truth. We will not always be popular, but God wants us to be strong in standing for the truth.

Jesus said, "You shall know the truth and my truth will set you free." (John 8:32)

- a. How do you think Galileo made such remarkable discoveries?
- b. What is something that is true today, that many people do not believe?
- c. How do we know the Bible is true?
- d. If someone told you that you can get to heaven by following any religion you like, what would you say?
- e. Read these Bible passages and write a short reflection for each one. What do these verses tell us about truth? *John 18:38; John 10:1-8; Matthew 7:13-14; John 14:5-7*

Galileo Galilei

Biography

Galileo Galilei lived in Italy from 1564 -1642. People in those days believed that the earth was the centre of the universe. They thought that the sun, moon and stars moved around the earth. Because the great teacher, Aristotle, had said that this was so, everyone believed it. Everyone, that is, except Galileo. He was one who wanted to find out truth for himself.

Galileo's brain couldn't rest. He had heard of a boy in Holland who had looked through a tube with spectacle glass in each end, and who found that distant objects looked much bigger. Galileo was determined to work out how this gadget worked.

He soon did. But Galileo's invention was far superior to the Dutch one. Through his telescope he could see Jupiter, which had four moons, Saturn with its rings, the spots on the sun and the milky way. Now that he had seen these things for himself, he was sure that the earth moved around the sun, and not the sun around the earth.

Galileo was very excited. He now understood that God's creation was greater than people had ever realised. Enthusiastically he started telling people of his discovery. However, trouble lay ahead. Galileo was called before the Pope. "How dare you defy the teachings of Aristotle!" shouted the Pope. "You must promise not to talk or write about your theory!"

Galileo kept quiet for seventeen years, but continued working silently. Then finally, he could keep quiet no longer. He published a book of his discoveries. He was brought before the Pope again. "Deny your theory or you will be imprisoned!" the Pope demanded.

Now quite old, and unable to bear the thought of imprisonment or torture, Galileo decided to agree that he had made some mistakes. But in his heart he knew that he had discovered the truth. Galileo lived the rest of his life quietly, working until his death in 1642.

In due time, the world found out that his discoveries were true, for truth cannot be stopped by threats of imprisonment or torture. Soon others took up the teachings of Galileo, which opened people's eyes to the laws of the Creation and the glory of the stars.

Activities – Galileo searches for truth

1. Where did Galileo live?
2. Which great teacher did everyone believe in those days?
3. What did people believe about the earth?
4. Draw a picture of the earth in the centre and the planets, sun moon and stars orbiting around it.
5. How did Galileo prove that this was not so?
6. Now draw the solar system as it really is, with the sun at the centre.
7. How do you think Galileo would have felt when no one would believe him?
8. How does God feel when so many people do not believe the truth about Him?

Thinking Skills

<p>Gravity and pendulums 1</p> <p>Invent a game that uses a beam balance.</p> 	<p>Gravity and pendulums 2</p> <p>To prove the theory of gravity, Galileo dropped a feather and a rock from the top of the tower of Pisa. What else could he have dropped to prove the theory?</p>
<p>Gravity and pendulums 3</p> <p>Make an improvement to a playground swing so that it is not so dangerous.</p> 	<p>Gravity and pendulums 4</p> <p>Design a children's playground that is made up of equipment that relies on gravity.</p>
<p>Gravity and pendulums 5</p> <p>Work out a sequence of 5 balancing exercises that do not use equipment. List the activities, e.g. balance on the left foot.</p> 	<p>Gravity and pendulums 6</p> <p>Invent a game that uses a pendulum to hit a target.</p>

God is Lord and King – Christmas theme

The Saviour's Birth – A Nativity Play

Narrator: Christmas fills our hearts with joy as we think of gifts, lights, and holiday spirit. But remember, Christmas means something more, it's the birth of our Saviour, Jesus Christ. Let us travel back to Bethlehem and share the story of His birth.

And it came to pass in those days, that there went out a decree from Caesar Augustus, that all the world should be taxed... So Joseph went from Galilee, out of the city of Nazareth, to Judaea, to the city of David, which is called Bethlehem... with Mary who was soon to give birth. (Luke 2:1-5)

Joseph and Mary travel to Bethlehem with their donkey, arriving at an inn.

Joseph: Do you have any room in the inn?

Inn Keeper #1: No, I'm sorry we are full. Try across the way.

Joseph leads Mary to the next inn and knocks.

Joseph: Please, do you have any room for us in your inn?

Inn Keeper #2: We have too many guests already, we have no room.

Joseph leads Mary to the third inn and knocks.

Joseph: Do you have any room for us in your inn? We have come a long way and my wife is with child.

Inn Keeper #3: All of our rooms are full. I have an empty stable out back you may use, it's not much, but it will give you some shelter.

Mary: Joseph, the baby will be coming soon, let's please go to the stable.

Inn Keeper #3: *shows Joseph and Mary the way.*

Song "Silent night"

Narrator: And while they were there, Mary gave birth to a son, her firstborn, and wrapped him in cloths, and laid him in a manger; because there was no room for them in the inn. (Luke 2:6-7)

Mary lays Him in His manger.

Song "Away in a Manger"

Shepherds enter the scene.

Narrator: In the same country, there were some shepherds in the field, keeping watch over their flock by night. And the angel of the Lord came to them, and the glory of the Lord shone round about them: and they were very afraid. (Luke 2:8-9)

Angel: Fear not: for, behold, I bring you good news of great joy, which shall be to all people. For unto you is born today in the city of David, a Saviour, Christ the Lord. And this shall be a sign: You shall find the baby wrapped in cloths, lying in a manger. (Luke 2:10-12)

Narrator: And suddenly there was a whole host of angels praising God, and saying... (Luke 2: 13)

Narrator & Angel in Unison: "Glory to God in the highest, and on earth peace, good will toward men." (Luke 2:14)

Shepherds: Let us now go now to Bethlehem, and see the newborn King. (Luke 2:15)

Shepherds quickly head to the manger.

Narrator: And they came quickly to the town, and found Mary, Joseph, and the baby lying in a manger. And when they had seen the baby, they told everyone they knew about what had happened. (Luke 2:16-20, Matt 2:1)

ONE YEAR LATER

Wise Men enter the scene bringing their gifts. Speaking to Herod:

Wise Man 1: Where is the baby who has been born King of the Jews?

Wise man 2: For we have seen his star in the east, and have come to worship him.

Herod: When you find him, please let me know where he is, so that I may worship him too.

Narrator: The Wise Men followed the Star and arrived at the house where Mary and Joseph were now living. There they saw the young child with Mary his mother, and fell down, and worshipped him, and presented him with gifts of gold, frankincense, and myrrh. (Matt 2:11)

Each Wise Men presents his gift to baby Jesus.

Narrator: God showed the wise men in a dream not to return to Herod. So, they travelled back to their own country by a different route.

THE END

Song: Joy to the world

The Christmas Gifts

It was two weeks before Christmas. Stephen emptied his money-box and counted his money. Only five dollars. That wouldn't buy much at all. He needed money to buy presents for his Mum, Dad, little sister, and his grandparents.

All the next week Stephen worked as hard as he could to earn some extra money. He raked the grass, washed the car, washed dishes, minded his little sister and swept the floor. Each job earned him another twenty cents.

At the end of the week, he tried to think of suitable gifts for each family member. He still didn't have enough to buy all the things he wanted. Stephen decided that instead of buying all his presents, he would make some. For Grandma and Grandpa, he made some coconut biscuits and for his little sister he made a hand puppet, (with a bit of help from Mum.) That left enough money to buy some earrings for Mum and some chocolate for Dad.

Luke came from a wealthy family. He didn't have to earn money. Dad gave him \$2 every week. Luke had saved some of his pocket money, but most of it he had spent on himself. He emptied his money box...only four dollars.

"Dad," said Luke. "Can I have some money to buy Christmas presents?"

"Sure, son," said his father. "How much do you need?"

"About \$50," said Luke.

Dad opened his wallet and gave Luke the money. The next day Luke went to the shops and bought Christmas presents for his family.

Discussion

Which boy was most sacrificial in his giving? Why?

Bible research

Discuss the use of sacrifices in the Old Testament.

Why could only the best animal or produce be offered?

God does not expect these kinds of sacrifices any more. In Old Testament times sacrifices had to be made as a way of saying 'sorry' for sin. However, when Jesus died on the cross, that all changed. Why? (Hebrews 7:27; Hebrews 10:1 & 10)

What sacrifices did Jesus make throughout his life-time?

EXAMPLES...gave up a comfortable home; secure job; spending time with family; His reputation; His life

In the Bible, many of the followers of Jesus made sacrifices too. Stephen was one who died for Jesus. Serving God is not always easy. What sacrifices do people make today in order to serve God?