

God is Pure and Holy Teacher's Topic Guide Year 8

Topic: Human Biology

Duration: 4 weeks

Spiritual overview

We are created in God's image. Each person is special to God. We are wonderfully made, a masterpiece of his handiwork. God wants us to accept ourselves as he made us and see ourselves as he does. We must thank God for the gifts he has given us and use those gifts to serve him. God wants us to keep our minds pure by living according to the instructions in the Bible. We can also keep our bodies pure by maintaining optimal health through healthy food and exercise habits.

God has created our bodies with built-in protective mechanisms. The body systems that offer protection are the circulatory system, the immune system and the skeletal system. Faith in the shed blood of Jesus protects the Christian from all spiritual adversaries. Blood is a powerful symbol of life and protection. Blood serves a number of functions in the human body. One of its principle roles is protection. God has designed our body with an incredible capacity for self-healing, given the right care.

Values: Our response to 'God is Pure and Holy'

- **Integrity:** always doing the right thing; showing the Fruit of the Spirit in our lives
- **Respect** for what is right
- Showing **obedience** to God by doing the things He wants us to do; admitting when we make mistakes and asking for God's forgiveness.
- **Thankfulness** to God for the way we are made.

Bible references

Genesis chapters 1 - 3 The creation and fall.

Matthew 10:29-30 God knows the number of hairs on our head.

Psalms 139 We are wonderfully made.

Genesis 1 God created us.

Genesis 1:26 Then God said, "Let us make man in our image, in our likeness."

Genesis 3 Sin entered the world, (the reason for sickness and disease).

Deuteronomy 7:12,15; Exodus 15:26 If you pay attention to my commands I will put none of these diseases upon you. I am the Lord who heals you.

Leviticus 22:4 - 8 Ceremonial health laws concerning infectious skin disease, touching a dead body, eating of meat torn by wild animals. These laws were given for the protection of the Jews, long before other cultures knew that disease was passed on by germs, carried by blood, and transferred from animal to man.

Ephesians 2:10 For we are God's workmanship, created in Christ Jesus to do good works, which God prepared in advance for us to do.

Acts 17:28 (a) For in Him we live and move and have our being.

1 Corinthians 6:19-20 Don't you know that your body is the temple of the Holy Spirit, who lives in you and was given to you by God?

Romans 12:1 Offer yourself as a living sacrifice to God, dedicated to His service and pleasing to Him.

Luke 10:27 Jesus said, "You shall love the Lord your God with all your heart, and with all your soul, and with all your strength, and with all your mind; and your neighbour as yourself." (Note that we are expected to 'love' ourselves, meaning 'look after ourselves'.

Outcomes: Students will

Gain a knowledge of the following body systems:

a) Systems with protective role: the circulatory system, the muscular-skeletal systems

b) Systems with elimination roles: digestive, respiratory and urinary systems

Activities

Discussion 1: Caring for the body

What do we mean by a body 'system'?

Different parts work together to make a system, and the systems work together to keep the body functioning. Relate this to Romans 12:12-27.

What does it mean to be valued?

What does God say about the value of each individual?

How do we keep our minds pure?

How do we obey God in caring for our bodies?

Discussion 2: Protective role of the body

How does our body protect itself?

How important is blood to life?

What examples of the shedding of blood can we find in the Old Testament?

How was this a symbol of what was to come?

Why do you think God chose blood as a symbol of protection from evil?

Circulatory system:

- Research the circulatory system.
- Draw the heart and show the direction of blood flow. Use red for arteries and blue for veins.
- Describe and draw different types of blood cells.
- Report on blood types if known.
- Research the functions fulfilled by the blood: transport of food, waste, oxygen, hormones and chemical messengers; anti-bacterial action of white blood cells, clotting capacity to prevent bleeding and temperature control.
- Use a microscope to identify different blood cells. (Prick finger and examine blood smear.)
- Participate in exercise for the cardiovascular system.
- Take pulse rate before and after exercise.
- Compare pulse rates of students in the class. Draw a graph to show pulse rates.

Skeletal system:

- Take a brief look at the skeletal system, and its role in protecting vital organs.
- Discuss food for bone building, (including vegetables).
- Draw the skeleton and label the major bones.
- Make a cut-out of a human skeleton and join the pieces together with needle and cotton so that the skeleton can move at the joints.
- Study a copy of an x-ray.
- Participate in weight-bearing exercises.
- Experiment with different body positions and discover parts that give support.
- Discover and discuss good posture when standing, sitting and walking.
- Research the way that muscles work in pairs.
- Research the role of joints.
- Art – making a model of the human skeleton

Digestive system:

- Draw the digestive system and label body parts: mouth, esophagus, stomach, small intestine, large intestine, anus
- Make a cut-out of the parts of the digestive tract and join them together like a jig-saw puzzle.

- List foods that help or hinder digestion (refined white products compared with food containing fiber).
- Explain what happens to a mouthful of food as it makes its way through the digestive system.
- Define respiration. (The use of oxygen, to produce energy and carbon dioxide).
- Art – make cut-out model of digestive tract.

Respiratory system:

- Draw the respiratory system and label body parts: diaphragm, lungs, nose, trachea, bronchi, bronchioles, alveoli.
- Observe chest expansion and contraction when breathing.
- Measure your breathing rate and breathing rate of other students. Calculate the average breathing rate in breaths per minute.
- Discover whether there is any relationship between pulse rate and breathing. (Measure both pulse rate and breathing rate before and after exercise).
- Measure how long they can blow through a straw into water after breathing in.
- Watch a DVD showing the dangers of smoking, and what it does to the lungs.
- Observe water vapor content of breath. Explain how the air we breathe in collects water vapor.
- Blow up a balloon to illustrate the alveoli.
- Discuss the problems faced by people with asthma.
- Maths – Measure breathing rates of class members and record in graph form.

Urinary system:

- Draw the urinary system and label body parts: kidneys, ureters, urethra
- Discuss the importance of drinking water, and the damage that dehydration can do to the kidneys.

Reproductive system:

- Draw the male and female reproductive systems and label body parts: uterus, vagina, ovaries, uterine tubes, mammary glands; scrotum, penis, testes, prostate gland.
- Explain the role of hormones.
- Discuss the dangers of man-made chemicals in upsetting the balance of hormones, (e.g. plastics, pesticides)

Interesting facts:

Medical treatment and blood

The medical knowledge that is available throughout the world today has not always been known. In Europe and America, up until about 200 years ago, there were some very strange ideas about the human body. One of these strange and harmful practices was called “blood letting”. Because people thought that diseases started in the blood, they thought that if you got rid of some blood it would help you get well again. So they would cut a vein and drain blood from the patient.

In December 1799, George Washington, then the president of the USA, became very ill. His doctors bled him four times in one day. In a few hours he was dead.

The practice of bleeding patients was also carried out in other parts of the world by folk healers. But doctors today know that bleeding does not help a sick person. It does just the opposite. That’s because the blood carries to every part of our body the things we need to stay alive. Removing the blood makes it harder for the blood that’s left in the body to do its job.

This information has been in the Bible for thousands of years. Leviticus 17:11 says, “The life is in the blood.” Isn’t it sad that in George Washington’s time people didn’t realize that this verse is true?

What the Bible tells us about blood is evidence that it is the Word of God, since no one else knew at the time the Bible was written.

NEW START stands for:

- **Nutrients** – are the parts of food that makes us grow, and stay healthy. Only healthy foods do this.
- **Exercise** – at least half an hour every day
- **Water** – 6 glasses a day, (not fruit juice or fizzy drink)
- **Sunlight** – for vitamin D for strong bones.
- **Toxin-free** – avoid artificial food additives and avoid toxic chemicals in the environment
- **Air** – get fresh air every day
- **Rest** – don’t stay up late
- **Think happy thoughts and trust in God**

Some definitions

Natural food: Also called ‘unprocessed food’. These are foods directly from nature, such as fruit, vegetables, nuts, meat, fish and eggs. Some dried or tinned foods can be classified as natural foods if they do not have food additives, e.g. dried beans, lentils, rice, butter, milk, tinned tomatoes.

Fast food: Convenience food from outlets. Ready-to-eat foods such as hamburgers, hot dogs, fried chicken and chips. These have some nutritional value but contain ingredients that are not good for our health. Should be eaten rarely.

Food additives: Chemicals added to give artificial colour or flavour, or to preserve the food.

Processed food: These are foods that are changed from their natural state and sold in packets, cartons and cans. Some have nutritional value. Some have additives. Food labels should be checked and assessed for health benefits.

Junk food: food with no nutritional value and food that may be bad for our health. These include sweets, sugary foods, savoury snacks such as potato crisps, and soft drinks or imitation fruit drinks. Should be consumed rarely.

Beacon Media research cards: The human body

Thinking skills: The human body

Biography: Lolohea Akosita

Values education God is Pure and Holy

Responsibility

Responsibility is...

- Being willing to be accountable for your behavior
- Acting in a mature way
- Being in charge of a person, a group of people, or material things

Being responsible is a sign of maturity. Parenting requires a great amount of responsibility. A baby depends on its parents to care for it in a responsible way. To be away from the baby, the parents will have to organize a baby sitter.

A responsible person...

- does whatever they agree to do. They follow through on their commitments.
- answers for their own actions. They don't make excuses or blame others for what they do. They accept their responsibility of being in charge.
- takes care of their own matters. They don't rely on others to remind them when they are supposed to be somewhere or what they are supposed to bring.
- is trustworthy. If somebody lends them something, that person knows it will be taken care of, and returned.
- makes good judgments, wise decisions and wise choices.
- doesn't put things off. When they have a job to do, they do it.

Activities

1. Make a list of jobs a responsible parent has to do when caring for their baby.
2. Make a list of responsibilities YOU have in your life at the moment.
3. Make a list of things you could improve on to become a more responsible person.

Righteousness (Living in a righteous way)

What does Righteous mean?

Write down the definition of righteous.

What does it mean to be a righteous person?

When did you act in a righteous way?

When did you act in an unrighteous way?

Why did you act in this unrighteous way?

Write down the verse 1 John 3:7 from your Bible.

What is God encouraging us to do?

Why do you think God wants us to be righteous?

Your body

Your body carries about your spirit. The Bible calls it your “temple” out of which you worship and serve God.

“Do you know that your body is the temple of the Holy Spirit?” (*1 Corinthians 6:19*)

If your body is in optimal condition, then the capacity for servicing God and others is heightened. So should you be aiming to keep your body in good shape? Think about how useful a fit and healthy person can be to God. When you are tired, sick, or a potential health disaster waiting to happen, you may be of less use to God. Although it is a ministry of the church to care and pray for the sick, the fewer sick people there are within the church, the more time Christians have to help those who do not know Jesus.

You must however be careful to check your motives for maintaining an optimal standard of fitness, health and beauty. Are you looking after your body out of obedience to God? Do you want to be fit to serve Him? Or is your motive to build a good physique to impress? Can an old and wrinkled lady be of use in God’s kingdom? Of course! She certainly won’t be lost to the temptations of vanity and pride in her striking looks and fashionable clothes.

Our bodies are not ornaments, but instruments to bless the purposes and heart of God. If we neglect nutrition and fitness, we may find that we have too little energy to serve well. As life progresses, we may also find that we have to spend money and time on medicine and doctors trying to keep up life momentum as a consequence.

“My body is not my own, I was bought at a price” (*1 Cor 6:20*). This implies that every Christian is obligated to practice a wise stewardship of the body, which is a gift from God.

Junk in junk out

What you put into your body, and what you refrain from putting into your body, affects your ability to glorify God. Toxic substances and junk food inhibit thinking and performance levels, as does lack of regular aerobic exercise.

While the motto, “all things in moderation” is generally good advice, we should beware of applying it to things that are toxic. Smoking for example, is not good, even in moderation. When it comes to things that are toxic, abstinence is the better way to go. And the difficulty with eating junk food in moderation is that there is no measuring stick. How much is too much? Is it once a day or once a week? We can make our own standard to appease our conscience. 'Hardly ever' for some people might be once a week. For some it might be once a day. Rather than saying "all things in moderation", it is better to say, "some things in moderation and some things never."

Art Year 8

God is Pure and Holy

The human body

Biblical wall text: Don't you realize that your body is the temple of the Holy Spirit, who lives in you and was given to you by God? You do not belong to yourself. 1 Corinthians 6:19

Art history

Why did the Ancient Greeks produce so many art works of sculpture representing the human body?

This was the beginning of a religion called 'humanism' which concentrates on the importance of human effort above everything else, and even above God. However, there was a great division between rich and poor. The rich ruled over the poor, who had no rights and many were treated as slaves. Humanism ignores the God of the Bible and puts the ideas of people above God.

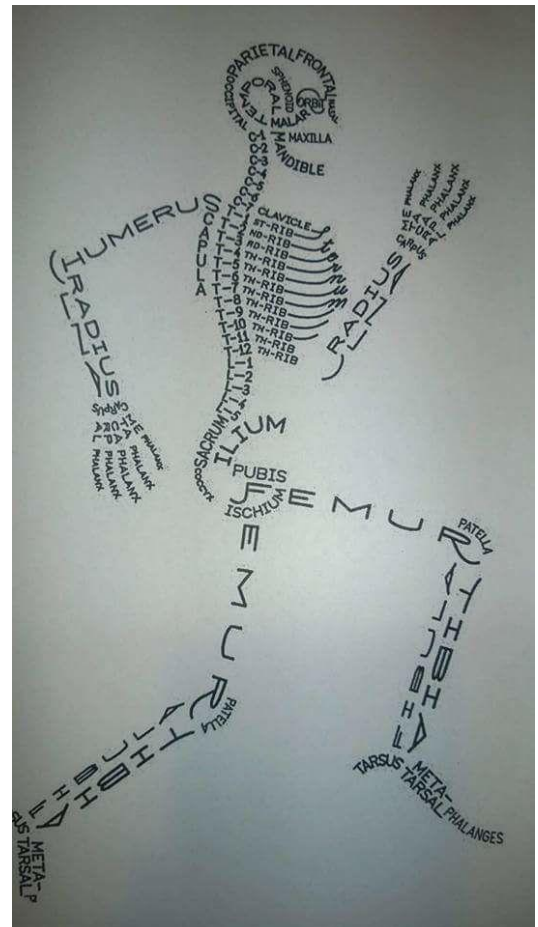
Do we see 'Humanism' at work in the world today?

Posters – to promote health and fitness

Example: Draw pictures to illustrate ideas

Benefits of Exercise

- Builds strength – stronger muscles and bones
- Coordination
- Confidence
- Healthy lifestyle
- Teamwork
- Meeting challenges
- Sportsmanship
- Commitment
- Fitness
- Flexibility



Practical Science: God is Pure & Holy Year 8

Topic: Human Biology

Test Your Dominant Side

<http://www.sciencekids.co.nz/experiments/dominantside.html>

This experiment will teach you more about how your body and brain work together. Test your dominant side by completing a series of challenges. Which hand do you write with? Which foot do you kick with? Do you have a dominant eye? Do you throw with one side of your body but kick with the other? Are you ambidextrous?

What you'll need:

- A pen or pencil
- Paper or a notepad to write your findings on
- An empty tube (an old paper towel tube is good)
- A cup of water
- A small ball (or something soft you can throw)

Instructions:

1. Write 'left' or 'right' next to each task depending on what side you used/favored.
2. When you've finished all the challenges review your results and make your own conclusions about which is your dominant eye, hand and foot.

Eye tests:

1. Which eye do you use to wink?
2. Which eye do you use to look through the empty tube?
3. Extend your arms in front of your body. Make a triangle shape using your fore fingers and thumbs. Bring your hands together, making the triangle smaller (about the size of a coin is good). Find a small object in the room and focus on it through the hole in your hands (using both eyes). Try closing just your left eye and then just your right, if your view of the object changed when you closed your left eye mark down 'left', if it changed when you closed your right eye mark down 'right'.

Hand/Arm tests:

1. Which hand do you use to write?
2. Pick up the cup of water, which hand did you use?
3. Throw the ball, which arm did you use?

Foot/Leg tests:

1. Run forward and jump off one leg, which did you jump off?
2. Drop the ball on the ground and kick it, which foot did you use?

What's happening?

What side do you favor? Are you left-handed or right-handed? Left footed or right footed? Is your right eye dominant or is it your left?

Around 90% of the world's population is right-handed. Why most people favor the right side is not completely understood by scientists. Some think that the reason is related to which side of your brain you use for language. The right side of your body is controlled by the left side of your brain, and in around 90% of people the left side of the brain also controls language.

Others think the reason might have more to do with culture. The word 'right' is associated being correct and doing the right thing while the word 'left' originally meant 'weak'. Favoring the right hand may have become a social development as more children were taught important skills by right-handed people and various tools were designed to be used with the right hand.

Around 80% of people are right footed and 70% favor their right eye. These percentages are lower than those who are right-handed and this could be because your body has more freedom of choice in choosing its favored foot and eye than that of its favored hand. In other words, you are more likely to be trained to use your right hand than your right foot and even more so than your right eye.

It's not strange to find people who favor the opposite hand and foot (e.g. left hand and right foot), and some people are lucky enough to be ambidextrous, meaning they can use their left and right sides with equal skill.

Try testing others and coming to your own conclusions about what side the human body favors and why.

Extra: Are you more likely to be left-handed if one of your parents is left-handed? What are some of the possible disadvantages for left-handed people? (Tools, writing materials etc.) Do left-handed people have an advantage in sports?

Is it better to be left-handed in some sports than others? What do you think?

Thinking Skills Pure & Holy Yr 8

<p>The human body 1 Write an acrostic poem for: S K E L E T O N</p>	<p>The human body 2</p> <p>Design a piece of playground equipment that will strengthen the leg muscles.</p>
<p>The human body 3</p> <p>Design a new and different piece of equipment that will help a person who has lost the use of their legs.</p>	<p>The human body 4</p> <p>Invent a new and different type of exercise machine.</p>
<p>The human body 5</p> <p>The answer is: “God created people in His image.”</p> <p>Work out 5 questions.</p>	<p>The human body 6</p> <p>Humans are more special to God than animals.</p> <p>Justify this statement.</p>

Thinking Skills Pure & Holy Yr 8

<p>The human body 6</p> <p>Draw an exercise bike. Now, redesign I by using the following steps:</p> <p>B – igger I – instead of N – onsense G – et rid of O – ther uses</p>	<p>The human body 7</p> <p>Create a new product for fitness by combining:</p> <p>a ball and a skipping rope</p>
<p>The human body 9</p> <p>The answer is</p> <p>“fitness”.</p> <p>Give 5 interesting questions.</p>	<p>The human body 10</p> <p>Brainstorm 5 solutions for this problem:</p> <p>Too many injuries are caused in sport.</p>
<p>The human body 11</p> <p>Design a solar powered piece of exercise equipment.</p>	<p>The human body 12</p> <p>Predict how people with hearing loss will be helped 50 years from now.</p>