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# Factors influencing Grade 7 teachers' implementation of outcomes-based approaches in the national curriculum when teaching 'human reproduction'

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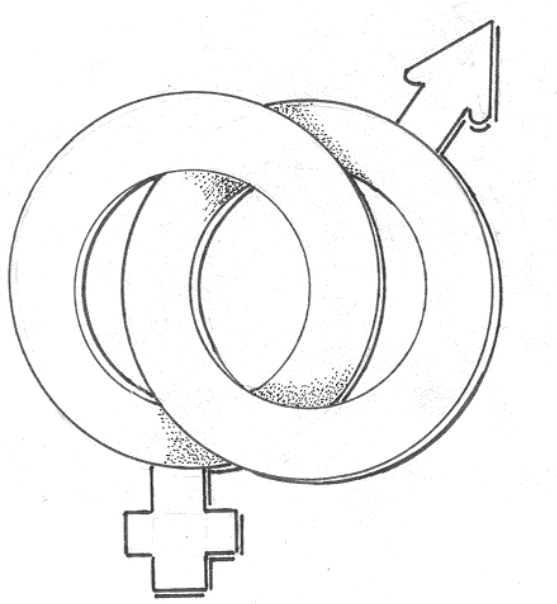
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**Appendix 3: Module on Human Reproduction**

**Appendix 3.1: Learner's module**

## Grade 7 Natural Sciences Learning Area

# Human reproduction



# Human reproduction

We are going to be learning about our bodies. We will find out how our bodies change as we become adults and we will learn about human reproduction. Some people don't like talking about this because they feel it's too private. But we need to understand how our bodies work. So we are going to draw up a code of conduct to help us.

**Code of conduct:** *How should we behave?*
We sometimes feel embarrassed when talking about the private parts of our body and so we joke or giggle. However these are normal parts of our body. We need to show our respect for each other so that we can talk freely and ask questions about our body during this module. So we need a code of conduct in which we agree on how to behave with respect towards one another. As a class, draw up a code of conduct for this module.

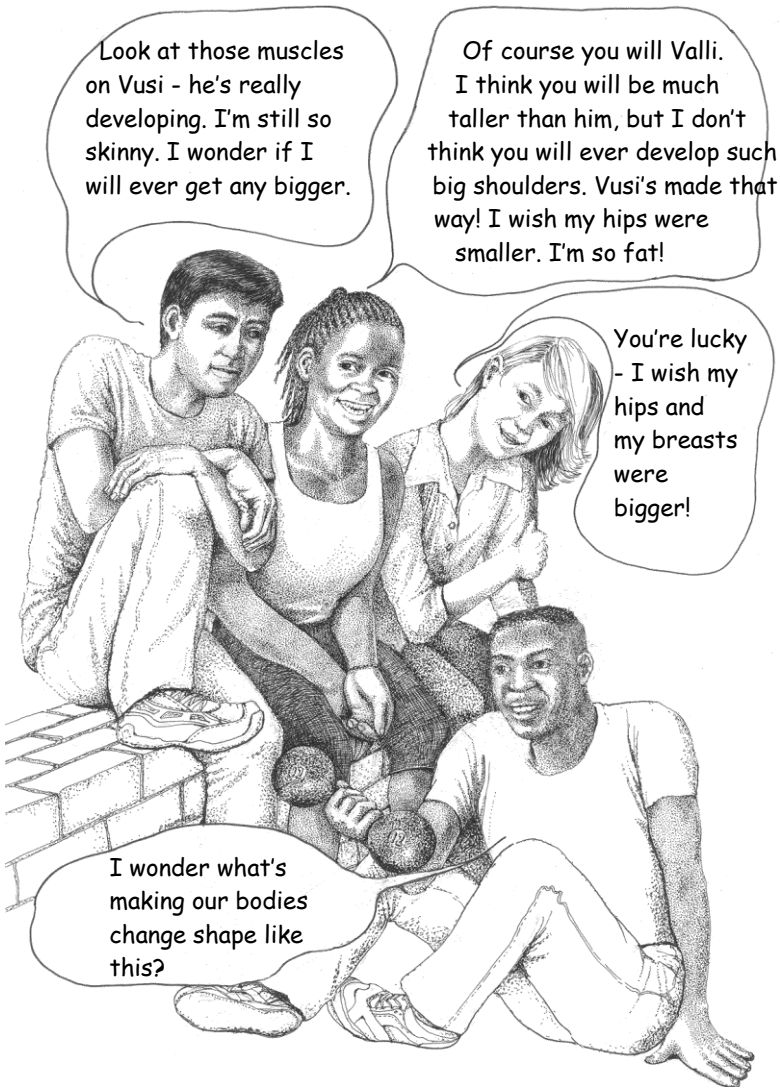
- Talk together about how you should behave to show your respect for one another.
- Agree on the main points.
- Write these points up on a big sheet of paper or cardboard so that everyone can see.
- At the beginning of each class, remember the code. Help each other to stick to your agreed on code of conduct.

## Our changing bodies

In most ways, boys and girls, and men and women look the same. They have eyes, ears, arms, legs etc. But there are differences which make us either male or female. We can see some of these differences in young babies, other differences only appear during the teenage years.

Your task (1):
Work in pairs and talk about the differences you have noticed in the appearance of baby boys and girls.

The teenage years are exciting and difficult years. This is the period of **adolescence**, when we change from being children to being adults. We enter **puberty**, the period during which we grow rapidly, change in shape and reach sexual maturity so that we can reproduce. During this period, our emotions and feelings also change. It can be a scary time and we sometimes worry about these changes, but if we know what's happening to us, it helps.




In your bodies are sex organs, **testes** in males and **ovaries** in females, which produce hormones. Hormones are chemical substances that cause physical and emotional changes in our bodies. What changes do they cause?

Your task (2): (Physical changes)
Work together in small groups to complete these activities.

1. Look at the diagrams below showing girls and boys at the beginning and end of puberty. (Figs 1&2)
**Talk about** the physical changes that take place in their bodies as they become adults and prepare for reproduction.

2. Now **write** down the numbers 1-15 and next to each number, describe the change/s that have taken place.
Can you think of any other physical changes that have taken place in the man and woman? Add these to your list?

3. Do all boys and all girls change in the same way? Think about breast size, pimples etc). In your groups, discuss differences in how people change.

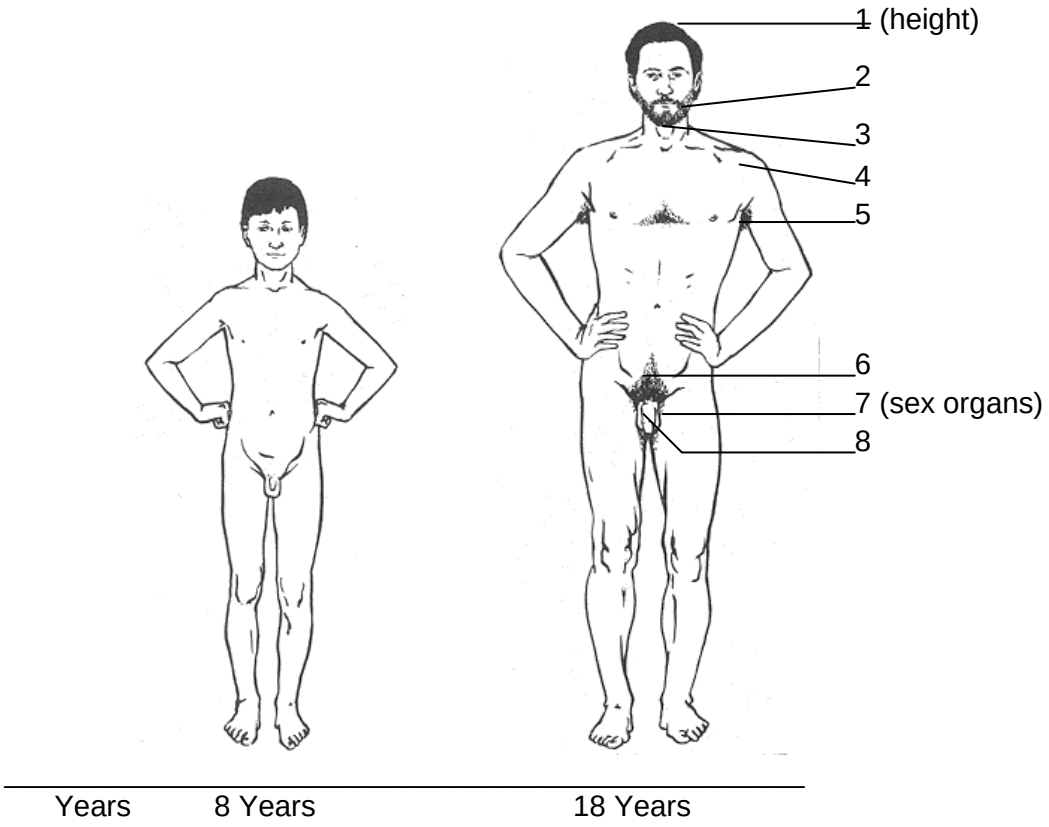



Figure 1: Physical changes: Boy to man

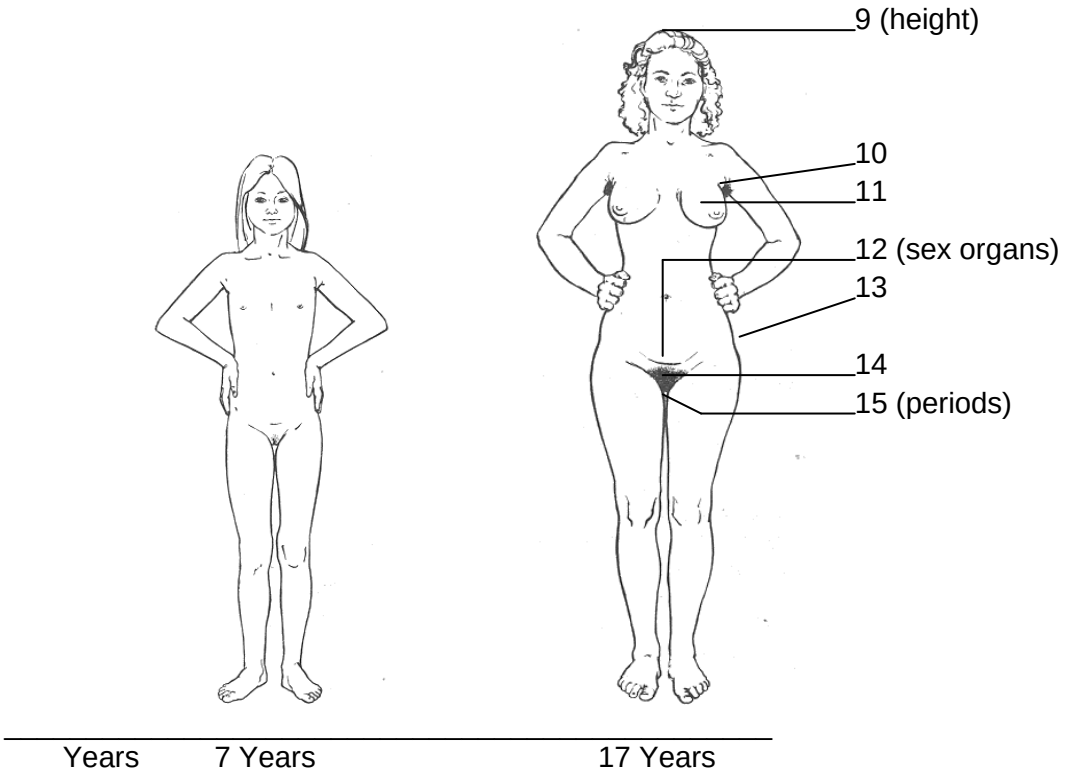



Figure 2: Physical changes: Girl to woman

## Do we all change at the same time?

No, of course not! We're all different. Some of you have already started puberty. Others will only start this year, next year or when you are a bit older.

The average age that girls begin puberty is $12^{1}/_{2}$, but the changes that take place during puberty can take place any time between 8 and 18.

For boys, the average age that puberty begins is 14, but some boys start puberty at the age of 10, and other boys start much later and only finish their sexual development and thus the end of puberty at the age of 20.

Several factors determine the age at which you start puberty. These include heredity, your sex hormones, the environment, your health and your diet.

Your task (3): (Emotional changes)

1. What emotional changes take place in boys and girls as they change and become adults? How do their feelings about their families, friends, teachers, TV personalities and others change?

In your groups, **brainstorm** all the emotional changes you've noticed in your older brothers and sisters, in friends or in yourself if you have started puberty (eg angry, arguing all the time, in love, frustrated, happy). Ask someone to record your ideas on a piece of paper
(Remember: when you brainstorm, the recorder writes down everyone's ideas. You cannot argue about or criticise any idea. Its a brainstorm - all ideas are welcome. )

2. Now select one of these changes and produce a very short role play for your class showing that behaviour. Each group should do a different role play. Check the content of your role play with your teacher before you begin so you don't repeat another group's role play.

3. As a class, talk about the emotional changes shown in each role play:
- Is this behaviour common among adolescents?
- Does every person show this sort of behaviour?
- How should the young person in each role play have behaved in this situation?

# The male sex organs

The male sex organs are outside the body. They are made up of the penis and testes.

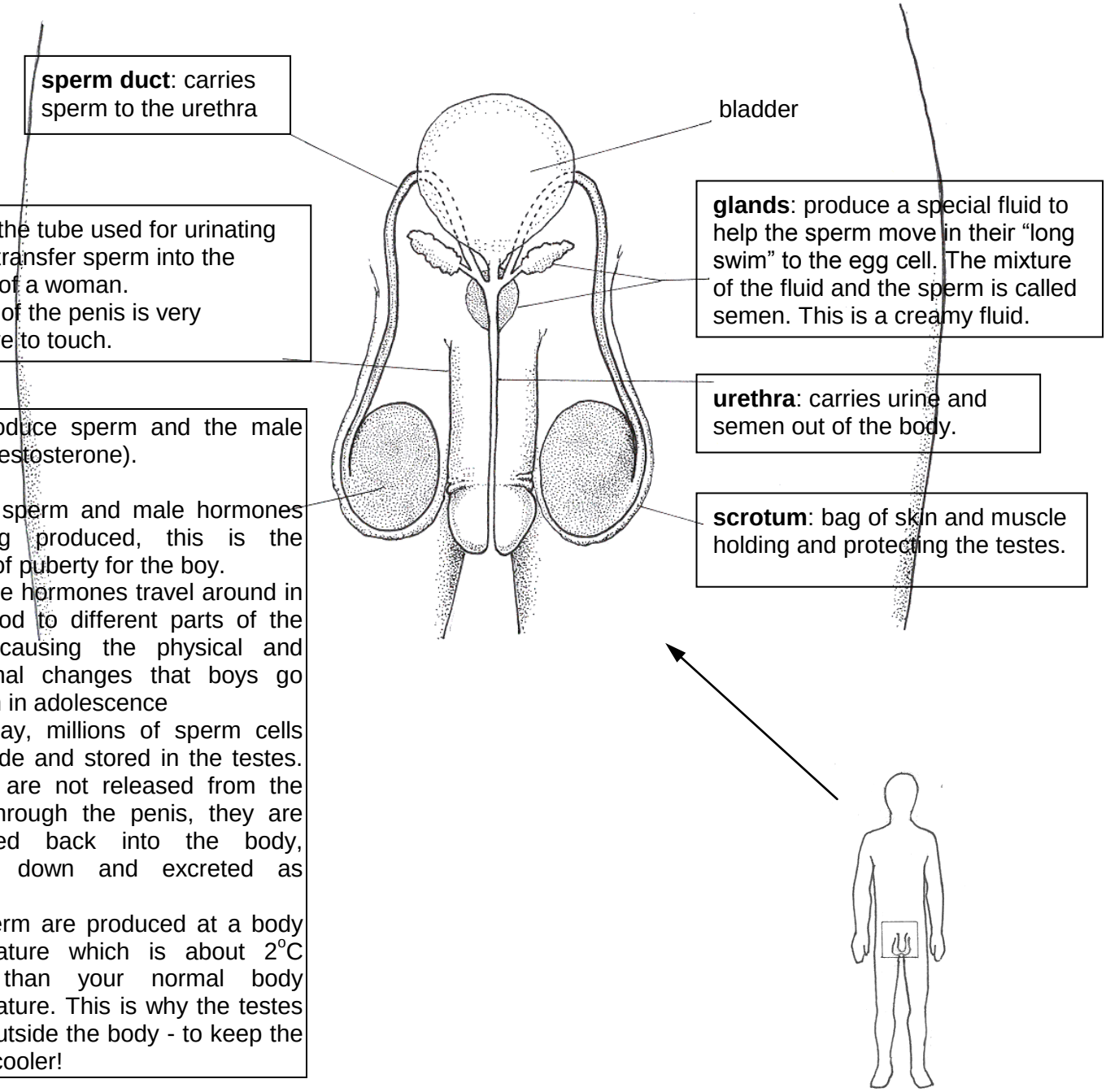



Figure 3: The male sex organs (front view)

Your task (4):
Can you find all these organs now when you look at a side view of a male? In your notebooks:

1. Draw a diagram of the male sex organs (side view) by tracing this diagram or drawing it freehand. Label the diagram.

2. Write down the name and number of the structure which
   a. carries semen
   b. carries sperm
   c. produces sperm
   d. carries urine
   e. produces sex hormones

3. explain why the muscles in the wall of the scrotum:
   - contract when it is cold, pulling the testes closer to the body?
   - relax when it is hot so that the testes hang away from the body?

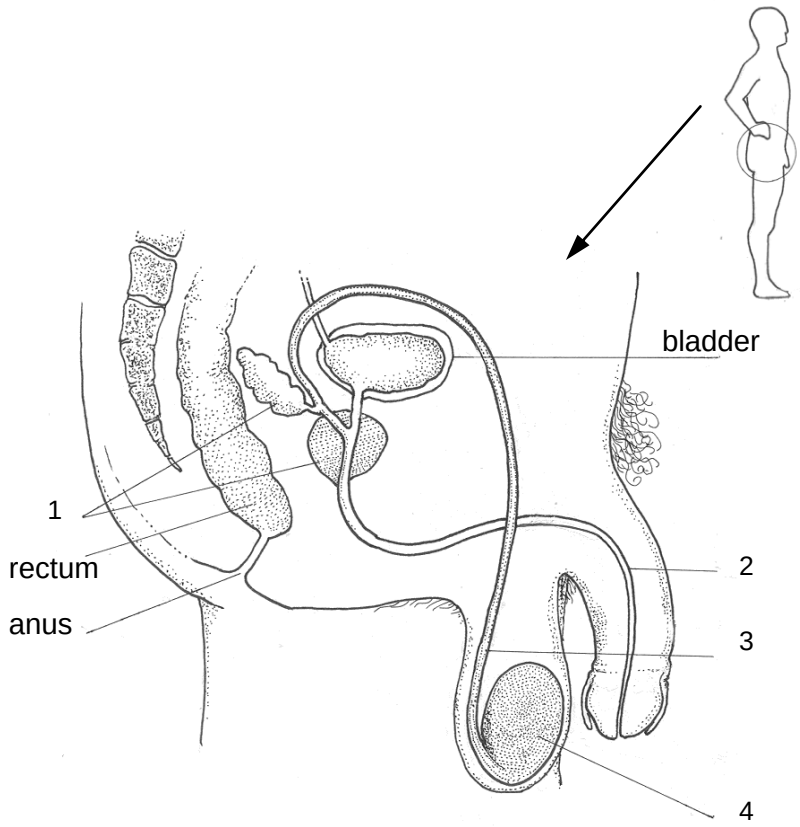



Figure 4: The male sex organs (side view)

## What's happening to my body? Male responses

Your task (5):
We all get worried about the changes happening to us as we go through puberty. We are going to play a game in which we learn more about male responses.

- Each group will be given some cards. On the front of the card is a question. Put the cards face up at the centre of your group. Do not look at the writing on the back of the cards.
- Each person in turn picks up a card and tries to answer it.
- If that person can't answer it, let the group try to answer.
- Then turn the card over and see how accurate your answer was.

Your task (6):
We are all sexual beings and puberty is the time when we start developing sexually and are attracted to the opposite sex. Do we respect our own and other people's sexuality?

In your groups, share your ideas on the following two questions.

1. In what way does the boy being talked about in the first picture and the girl being talked about in the second picture show a lack of respect for other people's sexuality?
2. In what ways can we show respect for one another and for our developing bodies?

Record your ideas in your notebook.

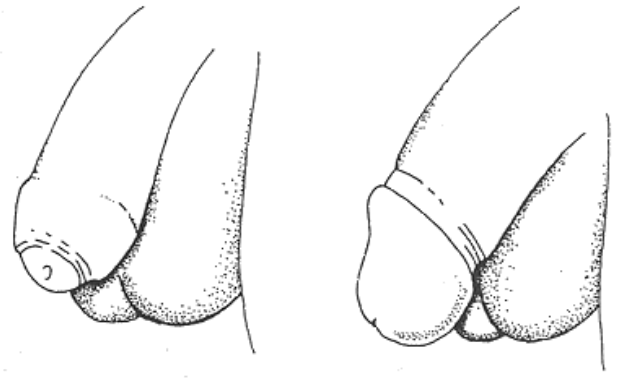






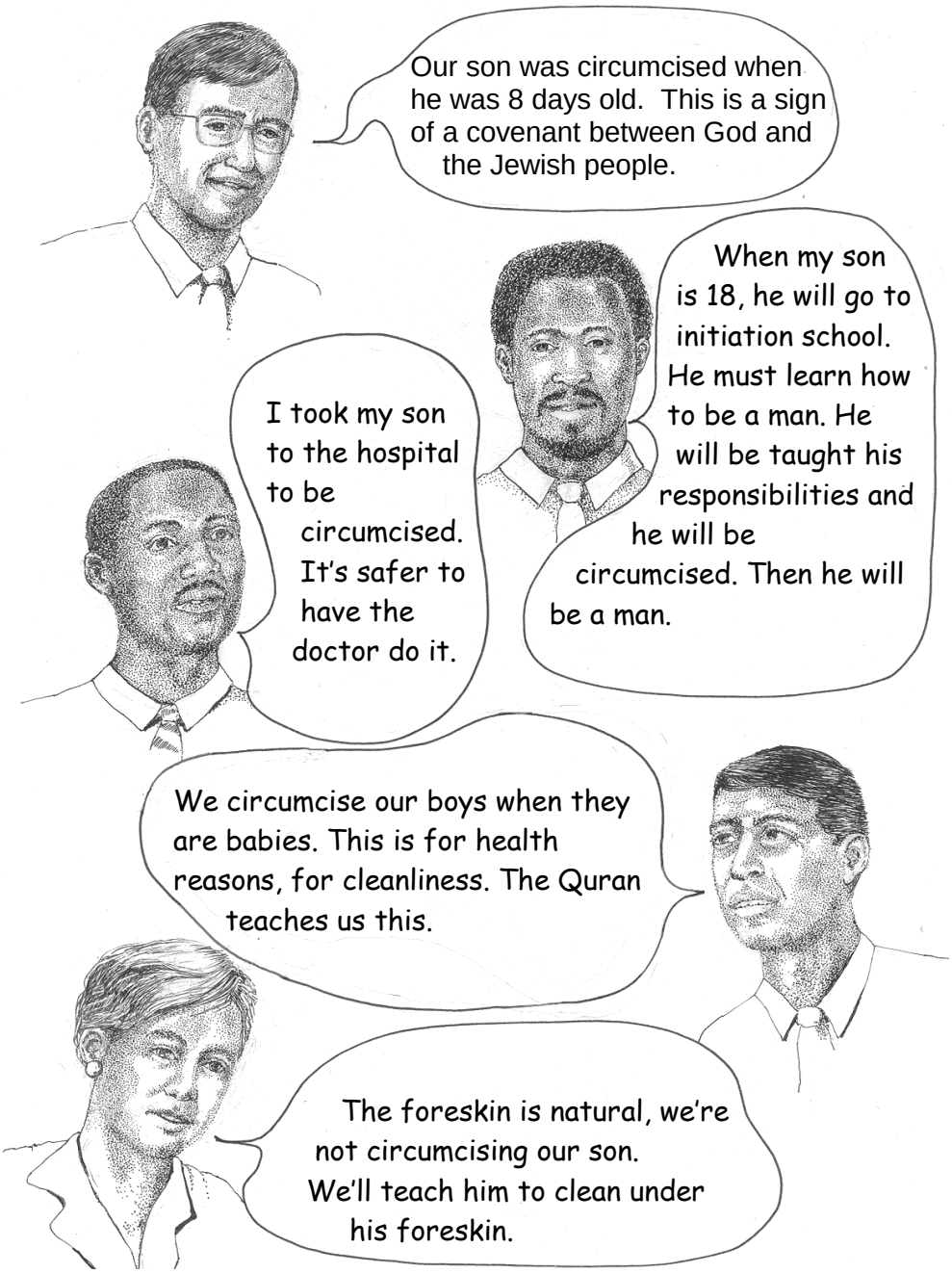
## Circumcision

At the end of a boy's penis, there is a fold of skin called the foreskin. This foreskin is sometimes removed for religious, or cultural or health reasons. This is called circumcision. Many African cultures as well as Jews and Muslims practice circumcision. At what age are the boys circumcised and why are they circumcised?
This is what some people say (see next page).



uncircumcised circumcised

Figure 5: An uncircumcised and a circumcised penis




Your task (7):

Learning about one another's cultures and viewpoints. In your groups, discuss the following.

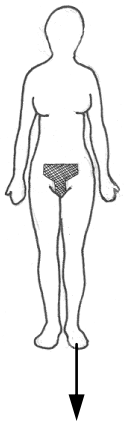
- Does circumcision take place in your culture?
- If circumcision does take place, what can you tell your group about circumcision, i.e. at what age does it take place, why does it take place, who circumcises the boy, and what are the ceremonies and customs associated with circumcision?

(This may be a private matter that cannot be discussed. If so, tell your group that you cannot talk about it. They will respect your privacy.)

- Is circumcision safe? Why do some boys get ill or die after circumcision? Can this be prevented?
- Is it healthier to be circumcised or uncircumcised? What do you think?

# The female sex organs

The female sex organs are found inside the body. Let's look at these organs.



**Ovaries**: Produce eggs and female sex hormones.

- All girls are born with hundreds of thousands of immature eggs (or ova) in their ovaries. Each month, usually only one egg matures and leaves the ovary, entering the Fallopian tube.
- The female sex hormones cause the physical and emotional changes that girls go through in adolescence and females go through during the menstrual cycle.

**Fallopian tube**: Pushes the egg towards the uterus. This is where the egg usually meets a sperm cell and is fertilised. The woman will then become pregnant.

**Uterus (womb):** This is where the fertilised egg develops into the baby.
Every month the uterus lining gets thick and spongy with blood in preparation for a fertilised egg.
If fertilisation does not occur, the lining breaks down and passes out of the body through the vagina. This is called menstruation.
If fertilisation does take place, the fertilised egg attaches to the lining of the uterus and grows into a baby. The women will not menstruate.
The uterus has thick muscular walls to contract and push the baby out at birth.

uterus lining

**Cervix:** This forms the opening into the uterus.

**Vagina (birth canal):** This is the tube through which the menstrual blood or the baby passes. The walls can stretch a lot and this is important because the baby must pass through here to get out of the body. During sexual intercourse, a man puts his penis in the vagina of a woman and releases sperm. The sperm swims to the egg and fertilises it.

Figure 6: The female sex organs (front view)

On the outside of the body are the female sexual parts. They are made up of the:

- **outer fold of skin** on both sides of the vaginal and other openings. This is thick, becomes covered by hair during puberty, and protects the openings.
- **inner fold of skin** which is thinner, has no hair and has oil and scent glands.
- **clitoris** which is sensitive to sexual stimulation.

Some or all of these parts are cut off during female circumcision.

There are three openings:

- **vaginal opening**. This is where blood comes out during menstruation, in which the penis is placed during sexual intercourse, and where the baby comes out when it is born.
- **urinary opening** in front of the vaginal opening (for urine).
- **anus** behind the vaginal opening (for faeces).

Your task (8):
Can you find all these organs now when you look at a side view of a female? In your notebooks:

1. Draw a diagram of the female sex organs (side view). Label the diagram.
2. Write down the names and numbers of structures
   a. Which form the opening of the uterus
   b. Which produces the eggs
   c. Through which the baby comes out
   d. Where fertilisation takes place
   e. Which produces the female sex hormones
   f. Where the egg develops and grows into a baby
3. Write down the names and numbers of the openings through which:
   a. menstrual blood leaves the body
   b. faeces leave the body
   c. urine leaves the body
4. Discuss female circumcision in class. Then write a paragraph on female circumcision. Explain which parts are cut off, why they are removed, in which cultures this takes place and the effects this can have on a woman.

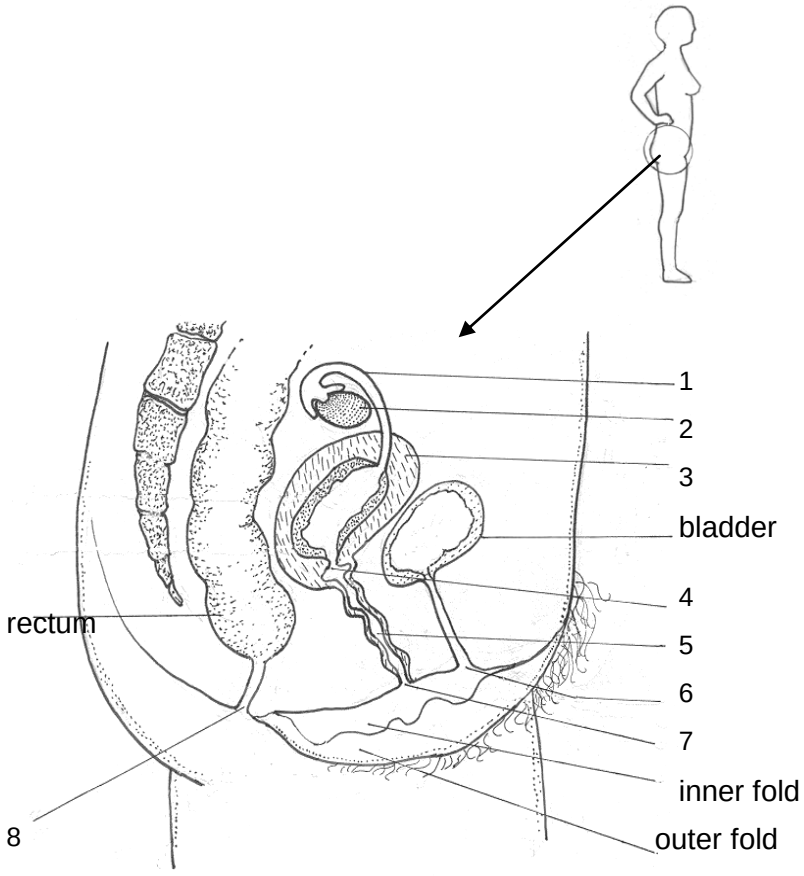



Figure 7: The female sex organs (side view)

## Breasts

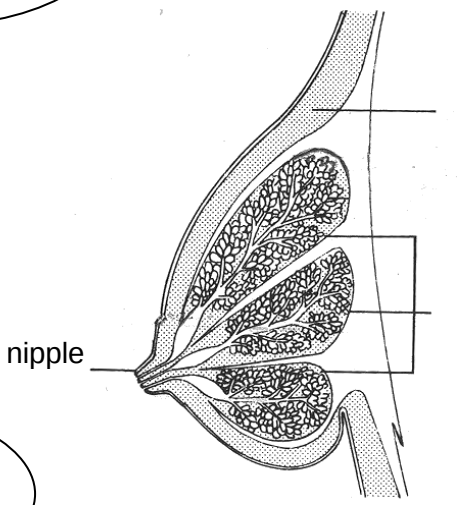
A girl's breasts develop at puberty. The female hormones make the breasts develop. The nipples grow first and then the milk-producing glands. The milk-producing glands in the breast are surrounded and protected by fat.
Did you know that:

The more fat there is, the larger a girl's breasts are.

The size and shape of a girl's breasts is mostly inherited but can also be caused by diet

Both small and large breasts have the same milk-producing glands. The amount of milk produced during breastfeeding does not depend on the size of the breasts.

One breast can have more fat and so be larger




The nipples are sensitive and go hard when a girl is cold or sexually excited.

The area around the nipple can be brown to pink in colour and in some people, a few hairs grow here.

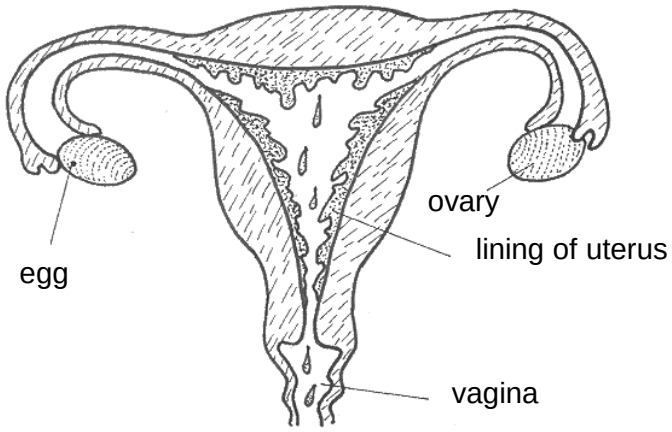
Figure 8: The breast

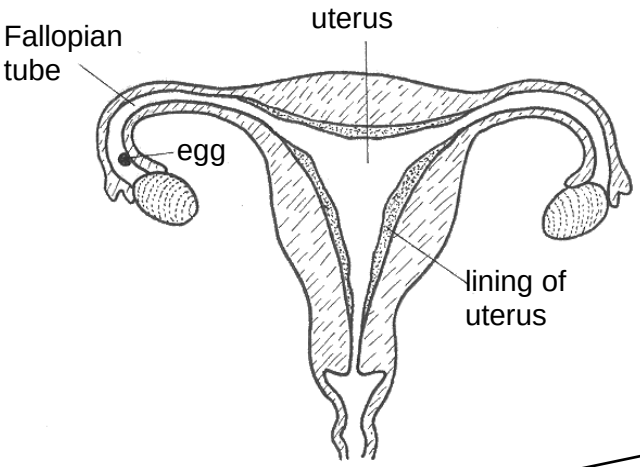
## The menstrual cycle

When girls reach puberty, they begin getting their monthly periods. This is when blood seeps out of the vagina for a few days of each month. The periods are a sign that eggs are being released from a girl's ovaries and that she can become pregnant.

About every 28 days, women go through a cycle of changes in their sex organs which we call the menstrual cycle. Female hormones from the brain and the uterus cause all these changes. Let's look at the menstrual cycle:

Day 1 - Beginning of periods:
The thick, spongy lining of the uterus begins to break down and leave the body through the vaginal opening and bleeding starts. Blood and mucous comes out with the lining. It seems that a lot of blood is lost but only 2-3 tablespoons of blood are lost during each period.
Menstruation can be very painful because the uterus lining is tearing away from the uterus and the uterus wall is contracting to push the lining out of the body. Some girls have a lot more pain than other girls.
At the same time another egg is developing in one of the ovaries.




Day 14 - The egg/ovum breaks out of the ovary. This can sometimes cause a sudden sharp pain. The egg travels along the Fallopian tube towards the uterus. This is the time when a woman is most likely to fall pregnant. A new uterus lining is developing.

Day 21 – The uterus lining becomes thick and spongy. The egg enters the uterus. If it has been fertilised, it will attach itself to the wall of the uterus and a baby will start to develop.
If the ovum is not fertilised it passes out of the vaginal opening but is too tiny to see. The uterus lining begins to break up and after day 28 it starts to leave the body. This is the start of menstruation - day 1 of the next cycle.

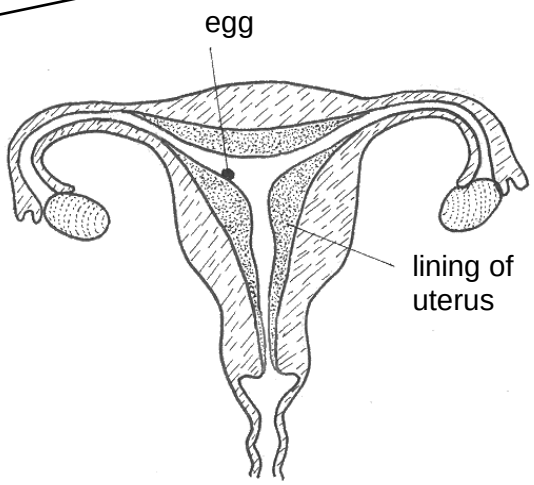


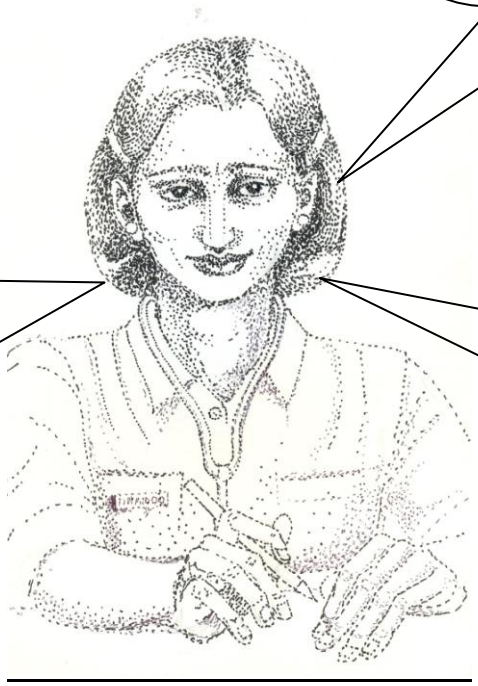

Figure 9: The menstrual cycle

Dr Naidoo, who has a column in Teenmag, answered the following questions about periods.

How long do periods last?

Usually about 4 days, but can be between 2 and 8 days.

How often do periods occur?



On average about every 28 days; but the length of the menstrual cycle varies from 20-35 days in different people.

What age do periods start?

Usually around 13-14 years of age, but any time between the ages of 9 and 17. Everyone's different!

Your task (9):

1. Discuss the following questions with the person next to you and then answer them in your notebooks. (Refer to the information on the previous pages if necessary.)
   a. How often does a girl get her periods? Explain.
   b. How long do a girl's periods last? Explain.
   c. Where does the blood and mucous of a girl's periods come from?
   d. When is a girl most likely to fall pregnant if she has sex?
   e. Is she able to fall pregnant at any other time of the month?
   f. Does a girl have her periods when she is pregnant? Explain
   g. Why does the lining of the uterus break down each month?
2. Two girls both start their periods on 1 August 2007. Maria has a regular 28 day cycle, and Lavanya has a 31 day cycle. Look at a calendar and write down the dates on which these two girls should expect to start menstruating from August to October.

*A suggestion for girls who have started menstruating: Mark the day you start each month on a calendar, and work out how long your cycle is and if you have regular periods yet.*

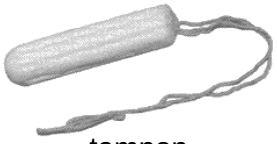
**Menstruation: good or bad?**

Some people call their periods "the curse" because of the pain and the bleeding. But girls should really celebrate because it means they are producing eggs and can have a baby one day. Hindus celebrate the start of menstruation as a sign of a girl becoming a woman. In a ceremony performed by the mother and aunts, the girl is dressed in adult clothes like a sari and a prayer is offered for her.

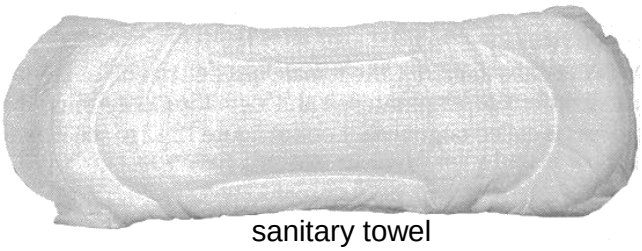
Is the start of menstruation celebrated by any other group? Share what you know.

## Staying healthy

Girls: When you menstruate, you will need to use tampons or sanitary towels or a clean cloth to absorb the blood flow. Tampons fit inside the vagina and absorb the blood flow before it leaves the body. Sanitary towels stick to the inside of the underwear and absorb blood as it leaves the body.



tampon



sanitary towel

Whatever you use, it needs to be changed every 3-5 hours. If you don't change it regularly, germs will start to multiply in the blood. Most tampons can be flushed down a toilet but can't be placed in a septic tank. Sanitary towels usually need to be wrapped up in toilet paper, newspaper or a plastic bag and thrown into a bin. Cloths need to be washed well before they are used again. You also need to wash your private parts every day so that you remain healthy.

When you are not menstruating, the vagina releases a creamy substance which does not smell. If this substance changes in colour and smell, then you may have an infection of the vagina. You should then visit the doctor or a clinic for a check-up.

## When does menstruation stop?

- During pregnancy, since the uterus lining becomes even thicker to nourish the developing baby
- When a person is sick and not eating healthily. The hormones are not being produced and so no eggs develop, the uterus lining doesn't thicken and that person can't become pregnant.
- When a person is healthy but for some reason they are not producing enough female hormones. A doctor can help this person by supplying them with artificially produced hormones.
- When a woman reaches menopause in her late forties or early fifties. Menopause is when no more eggs develop and a woman can no longer fall pregnant.

## Thrush: a common problem

Thrush is caused by a fungus which lives naturally in the vagina of many women. The fungus can grow out of control due to illness, diabetes, AIDS, pregnancy, the pill, antibiotics, not changing sanitary towels or tampons regularly, and for other reasons. Then the fungus causes thrush, a common vaginal infection which causes itching around the vaginal opening and a white smelly discharge. It can be transmitted sexually. However, if you have thrush, this doesn't mean you have been sexually active. If you think you have thrush, consult a doctor or the clinic. Thrush can easily be treated with a special vaginal cream which you can get from a clinic or the chemist.

The fungus which causes thrush can also occur in the intestines and so some of it comes out in the faeces. When girls go to the toilet, they should wipe from the anus backwards so that the fungus doesn't reach the vaginal opening.

A number of girls have written to Dr Naidoo of Teenmag for advice. Here are their letters.

I'm so worried. My periods haven't started yet and I'm 15!
Sarah

My stomach gets terrible cramps when I start menstruating. Its so painful. What can I do?
Nozuko

Why do I get pimples when I start to menstruate?
Sibongile

I always feel depressed just before my periods start and I cry a lot. Is this normal?
Fatima

My granny told me I mustn't bath or swim when I'm menstruating. She said it's very bad for you. Is this true?
Margaret



I've heard that a girl must not take any exercise when she menstruates. Is this true?
Constance

A month ago I started to get very itchy below. There's white smelly stuff on my panties. I've never had sex. What's wrong with me? What can I do about it?
Carole

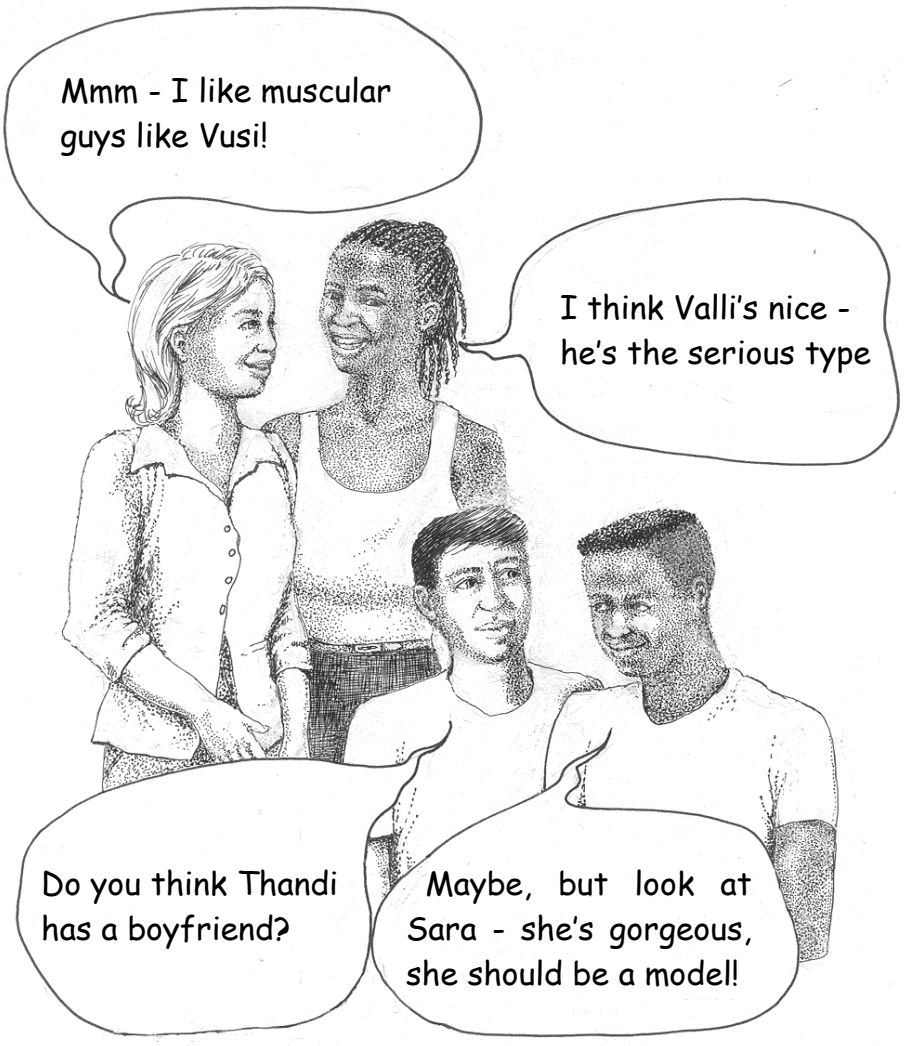
My breasts are much smaller than my friends. Will I have enough milk for my baby?
Anne

My breasts are so big. Will I be attractive to boys?
Mariette

My periods have always been regular. But now I haven't had my periods for two months and I'm worried. Am I pregnant?
Jennifer

Your task (10):
1. Imagine that you are Dr Naidoo and write a short response to three of these letters, giving each writer some advice.
2. Share your letters with two other friends in your class. Do they agree with your response?
3. Discuss your ideas with the rest of your class.

# Meeting a partner




When we enter adolescence, male or female sex hormones start to be produced in our sex organs. These hormones travel to our brain and produce an urge in us to start looking for a partner.

Your task (11):
Use your general knowledge of vertebrate reproduction and what you studied last term to answer the following questions. Discuss your ideas with a partner.
1. Why do animals look for a partner?
2. How do animals attract the opposite sex. (Think of one example from each vertebrate group i.e. fish, frogs, reptiles, birds, mammals)
3. Are the females mature physically or still developing when they first mate?
4. In mammals in the wild, when is the male able to mate with the female? What prevents the male from mating while he is still a young but adult male? (Think of competition)
5. When do birds and mammals mate, all the time or at specific times of the year? Explain the reason for this. What preparations do the parents make for the babies they produce? (Think of shelter, food supply, ability to protect the young against other predators.)

Are people similar in their behaviour to animals?

# Sexual intercourse and responsibility

Biologically the search for and gaining of a partner is important for the human race. Men and women, like animals, need to find a partner, mate, produce babies, and look after them while they grow up. In this way the human race continues.

### What is sexual intercourse?

This is what we call "mating" in other animals.
Sexual intercourse is when two people have sex. A man puts his erect penis inside the vagina of a woman and releases his semen containing millions of sperm into her vagina. The semen is pushed out rapidly (ejaculation) and the sperm begin to swim up the uterus to the Fallopian tubes in search of an egg to fertilise. If the egg is present in the tubes, the sperm will fertilise the egg and a baby will start to develop.

Your task (12):
Look at your diagrams of the male and female sex organs on pages 5, 6, 9 and 10 and draw a flow diagram using words and arrows to show how sperm get from the testes where they are produced to the egg in the Fallopian tubes.

If girls have not yet entered adolescence or have only been adolescent for a short time, they are not ready physically for sex. Their sex organs are still developing and sex will be painful and could damage their internal organs. This could result in them being infertile when they are older and want children.

### When are people ready for sex?

We have looked at other animals. Now let's look at humans.

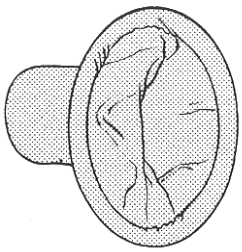
Your task (13):
Talk in your group about the following.
1. Like other animals, we as human beings have rules in our society which protect us until we are mature enough for sexual activity. These may be religious, family or cultural rules. Talk about these rules in your family, culture or religion that protect you as a young person.
2. Many people don't stick to those rules. So what do you think? What is responsible behaviour between young people as they grow up and become adults? After your group discussion, write a short paragraph in your notebooks on what **you** feel is responsible behaviour between adolescent boys and girls.

### Does anyone have the right to have sex with you?

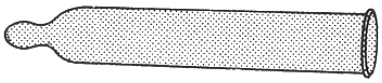
Sometimes men or boys force sex on girls, and sometimes boys are forced to have sex. This is rape. Rape is forcing a person to have sex against their will and its against the law. Is this responsible sexual behaviour? The person raping the girl or boy could be the father, uncle, friend, or a stranger. Whoever it is, if you are raped, you should get help.
You could contact:
Childline: 080 005 5555 (free call)
FAMSA (Family Life Centre): 082 231 0370
Life Line: AIDS Helpline: 080 001 2322 Stop gender abuse: 080 015 0150
National Crisis Line: 086 132 2322
People opposing Woman Abuse: 011 642 4345
Statutory rape is when an adult has sex with a child under the age of 16. This is against the law. The law protects children against the physical and emotional damage of having sex when they are too young.

## Preventing fertilisation

When people want to have sex but don't want a baby, they use contraceptives. These are things that somehow prevent the sperm from fertilising the egg.
The most common contraceptives are:
- the **condom** - this is a rubber tube which is placed over the erect penis and collects the sperm during intercourse so that sperm cannot enter the vagina.



rolled up condom



unrolled condom

- the **pill** and the **injection** - these contain hormones which prevent an egg from developing in the ovary but supply the rest of the hormones for the menstrual cycle.

Your task (14):
Use health pamphlets to find out:
- how safe the condom, the pill and the injection are as contraceptives.
- how condoms protect a person against sexually transmitted diseases.
Write short notes on your findings

## Are you ready to have a baby?

Do you want a baby? Both the father and mother need to help look after their baby. Are you ready to look after your baby? Let's find out!

Project: Looking after my baby!
You or your girlfriend has just given birth to a baby, and now you need to look after the baby. This is what you need to do.

1. Take a 5kg bag of sugar, flour or maize meal, put it in a plastic bag to protect it and add a head, legs and arms. Make a baby.
2. Now dress your baby in a nappy and some baby clothes. Wrap it in a blanket since its cold. Make sure your baby has a comfortable place to sleep. Have a baby bottle ready so you can feed your baby.
3. As a responsible parent, bring your baby to school every day. Bring a change of nappies and baby clothes and the baby bottle.
4. Look after your baby carefully. Find a babysitter when you are playing sport, or doing something where you can't take your baby.
5. When your teacher tells you:
    - your baby has wet its nappy – change the nappy
    - your baby has been sick – change its clothes
    - your baby needs to be fed – give your baby its bottle. Hold the bottle for 5 minutes while you feed it.
    - your baby has colic and is crying – stand up, rock your baby and rub its back until the baby burps (after 10 minutes).

After 2-4 weeks, write a one page essay describing what it is like to look after a baby.

# Sexually transmitted diseases

Certain diseases can be passed on to a partner during sexual intercourse. They are called sexually transmitted diseases or STD's. Common STD's are gonorrhoea, syphilis, AIDS, herpes and hepatitis B.

*Look at a crowd of people in the streets, at a cricket or soccer match or on a bus. Which of these people has an STD? Can you see?*

Gonorrhoea, syphilis and hepatitis B

These diseases are dangerous STD's. They can cause infertility, blindness, heart problems, skin diseases, mental disorders, abnormalities in a developing baby, jaundice, disease of the liver and other symptoms. Hepatitis B is a killer disease.

A research project:

1. Collect information from clinics, books, the internet etc. on gonorrhoea, syphilis and hepatitis B.
2. Draw up a table so that you can compare these three diseases.
   Put the diseases as headings for the columns (at the top)
   Put the following questions as headings for the rows (down the side)
   - How do you get the disease?
   - How long does it take for the disease to be seen/felt in the body?
   - What are the symptoms of the disease?
   - How is it treated?

   You can spread your table over two pages.
3. On the next 1-3 pages, provide drawings and any pictures you can collect on these three diseases.

Other STD's

Herpes is an STD caused by a virus. The virus causes painful blisters which change into open sores on the mouth and sex organs. It can't be cured, but the symptoms can be treated and relieved. If you think you have herpes, you need to seek medical attention.

HIV/AIDS is another killer disease caused by a virus. You have probably already learnt about HIV/AIDS. You will study this disease again in detail next year.

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