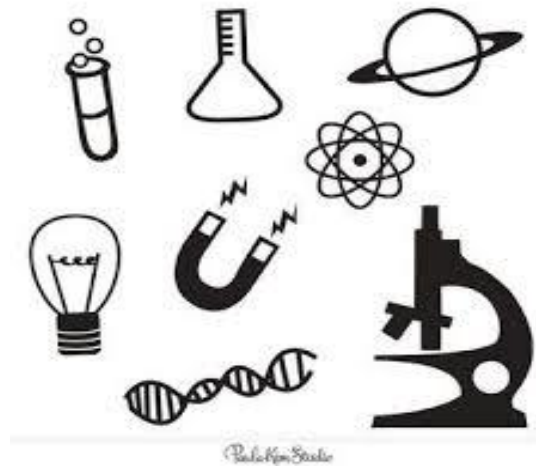




DURHAM JOHNSTON
COMPREHENSIVE SCHOOL
DARE TO BE WISE

Year 7 Science Workbook



This workbook is to complete if you are struggling to access Active Learn and Seneca and is not additional work every student is expected to complete.

You can use this for extension activities if you would like to.

Each week you will have a topic to cover with short answer questions and multiple-choice questions.

You can access support by logging into the S drive using remote desktop and going to;

Science →KS3→ Support for KS3 content.

You can also use the link to BBC bitesize at the top of the weeks work to get support.

You can print the work out, complete it on paper or in your exercise book.

You should self-assess work using the mark scheme also on the website.

This is the first version of the workbook and contains work for weeks 1-3 watch for updates with more work added in later weeks.

Week 1 Biology Cells

Support <https://www.bbc.co.uk/bitesize/topics/znyycdm/articles/zr69dxs>

Cells

1. What are cells?
2. How do you calculate the total magnification when using a microscope?
3. What structures do animal and plant cells have in common?
4. What structures are found in plant cells but NOT animal cells?
5. What is the function of the nucleus?
6. What is the function of the cytoplasm?
7. What is the function of the cell membrane?
8. What is the function of the mitochondria?
9. What is the function of the vacuole?
10. What is the function of the cell wall?
11. What is the function of the chloroplasts?
12. What is diffusion?

Biology Cells Y7 - multiple choice



1. What is the mirror used for when using a light microscope
 - A. To reflect light away from the stage
 - B. To reflect light up through the hole in the stage
 - C. To reflect light off the lens
 - D. To absorb light from the light source

2. If the eyepiece lens has a magnification of x10 and the objective lens has a magnification of x20, what will the overall magnification be?
 - A. 30
 - B. 10
 - C. 200
 - D. 2000

3. What are the 4 parts found in both an animal and a plant cell?
- A. Cell membrane, cytoplasm, nucleus and mitochondria
 - B. Cell membrane, chloroplast, nucleus mitochondria
 - C. Cell membrane, cell wall, nucleus, cytoplasm
 - D. Cell wall, nucleus, chloroplast, vacuole
4. What part of the plant cell is needed for absorbing light for photosynthesis?
- A. Cell wall
 - B. Nucleus
 - C. Cytoplasm
 - D. Chloroplast
5. Sperm cells contain many mitochondria, this is because...
- A. The mitochondria controls the sperm cells activity
 - B. The mitochondria are where protein synthesis takes place
 - C. The mitochondria are where respiration takes place to release energy
 - D. The mitochondria contract to move the tail
6. Which type of cell has **no** nucleus to increase the space for carrying oxygen?
- A. Red blood cells
 - B. Nerve cells
 - C. White blood cells
 - D. Root hair cells

Week 2 Chemistry Separating Techniques

Support <https://www.bbc.co.uk/bitesize/guides/zgvc4wx/revision/1>

1. What is a mixture?

2. Give definitions for;

Solvent;

Solute;

Solution;

3. When would you use Distillation to separate a mixture?

4. When would you use Evaporation to separate a mixture?

5. When would you use Filtration to separate a mixture?

6. Why could you not use distillation to separate sand and water?

7. Draw a diagram to show how a filtration is set up label all key parts.

8. Look at the chromatography image which two inks are the same, how do you know?



Chemistry Multiple Choice Test -Separation techniques

1. Which of the following describes the particles in a mixture?
 - a. Different types of particles that are bonded together
 - b. All the same type of particles
 - c. The same types of particles bonded together
 - d. Different types of particles not bonded together

2. If a substance doesn't have a specific melting point, but rather has a range of melting points – what can you say about that substance?
 - a. It is an atom
 - b. It is an element
 - c. It is a mixture
 - d. It is a compound

3. Which type of separating technique should be used to separate an insoluble solid from a liquid?
 - a. Evaporation
 - b. Distillation
 - c. Filtration
 - d. Chromatography

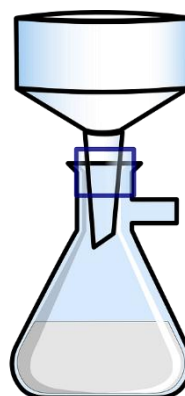
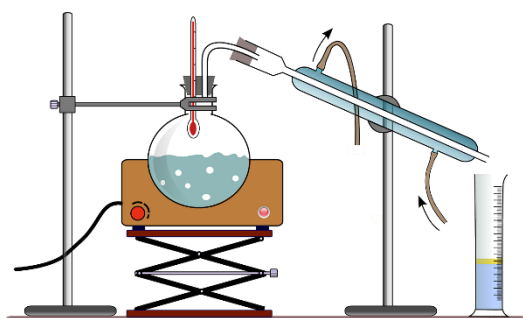
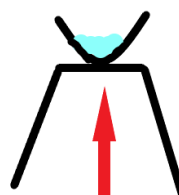
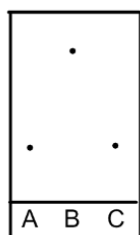
4. Which type of separating technique should be used to separate two different liquids by their boiling point?
 - a. Evaporation
 - b. Distillation
 - c. Filtration
 - d. Chromatography

5. Which of the following factors affects how much solute can dissolve into a solvent?
 - a. The size of the lump of solute
 - b. The temperature of the solvent
 - c. The colour of the solvent
 - d. The colour of the solute

6. How can I collect pure salt from rock salt?
- a. Grind up the rock salt. Dissolve it, distil it then evaporate it.
 - b. Grind up the rock salt. Dissolve it, evaporate it then distil it.
 - c. Grind up the rock salt. Dissolve it, filter it then evaporate it.
 - d. Grind up the rock salt. Dissolve it, evaporate it then filter it.

7. What does chromatography do?
- a. Separates different liquids by their solubility
 - b. Separates different liquids by their boiling point
 - c. Separates different liquids by their acidity
 - d. Separates different liquids by their price

8. Which of the following is a diagram of chromatography?



Week 3 Energy resources

Support <https://www.bbc.co.uk/bitesize/guides/zggk87h/revision/1>

1. What is energy?
2. What is temperature?
3. What is Power?
4. Name 3 types of energy store.
5. Name 3 ways energy can be transferred.
6. Name three fossil fuels.
7. Name three renewable energy sources.
8. What is the key difference between renewable and non-renewable energy resources?
9. What is the main environment concern linked to burning fossil fuels?
10. What does efficiency measure?

Energy - multiple choice

1. What is the definition of kinetic energy?
 - A. The energy stored by an object lifted up against the force of gravity.
 - B. Energy stored in squashed, stretched or twisted materials.
 - C. The energy that moving objects have.

2. What is meant by the term conservation of energy?
 - A. The total energy of a system changes, (energy can stored or transferred).
 - B. The total energy of a system increases, when energy is transferred
 - C. The total energy of a system stays the same, that energy cannot be created or destroyed (only stored or transferred).

3. A battery stores which type of energy?
 - A. Thermal
 - B. Kinetic
 - C. Chemical
 - D. Nuclear

4. Which unit is used to measure energy?
 - A. Kilogram
 - B. Watt
 - C. Newton
 - D. Joule

5. Which form of energy is stored in a piece of coal?
 - A. Heat energy
 - B. Kinetic energy
 - C. Potential energy
 - D. Chemical energy

6. Which of the energy changes below represents the main energy change that takes place in an electric motor?

- A. Strain energy \longrightarrow Kinetic energy
- B. Chemical energy \longrightarrow Electrical energy
- C. Electrical energy \longrightarrow Kinetic energy
- D. Chemical energy \longrightarrow Kinetic energy

7. Which of the energy changes below represents the main energy change that takes place when an arrow is fired from a bow?

- A. Elastic potential energy \longrightarrow Kinetic energy
- B. Electrical energy \longrightarrow Kinetic energy
- C. Chemical energy \longrightarrow Heat and light energy
- D. Chemical energy \longrightarrow Sound energy