

Name _____ Class _____ Date _____

Topic 8A: Food and Nutrition

Draw a ring around a number of stars for each statement. If you are very confident about a statement, draw your ring around all the stars. If you do not know anything about a statement do not draw a ring.

| Topic | At the end of the unit: | |
|-----------------------------------|---|-----------|
| 8Aa | | |
| | Recall why we need food. | * * * * * |
| | Recall the nutrients we need in our diets. | * * * * * |
| | Describe why our bodies need fibre and water. | * * * * * |
| | Interpret food information labels. | * * * * * |
| | Recall the tests used to detect some nutrients. | * * * * * |
| 8Ab | | |
| | Recall some good sources of the different nutrients and fibre. | * * * * * |
| | Describe how factors change the amount of energy we need from food. | * * * * * |
| | Describe what our bodies use the different nutrients for. | * * * * * |
| 8Ac | | |
| | Describe the benefits of a balanced diet. | * * * * * |
| | Explain how different types of malnutrition are caused and their effects. | * * * * * |
| | Interpret Reference Intake (RI) information. | * * * * * |
| 8Ad | | |
| | Identify and recall the main organs in the human digestive system. | * * * * * |
| | Describe the functions of the organs in the digestive system. | * * * * * |
| | Explain how food is moved through the digestive system. | * * * * * |
| | Describe how enzymes work as catalysts in digestion. | * * * * * |
| | Recall some benefits and drawbacks of bacteria in the digestive system. | * * * * * |
| 8Ae | | |
| | Recall what happens in respiration. | * * * * * |
| | Explain how diffusion occurs in terms of movement of particles. | * * * * * |
| | Explain how diffusion allows absorption by the small intestine. | * * * * * |
| | Explain how the small intestine is adapted to its function. | * * * * * |
| 8Ae Working Scientifically | | |
| | Explain the importance of surface area in science (e.g. in absorption). | * * * * * |

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Draw a ring around a number of stars for each statement. If you are very confident about a statement, draw your ring around all the stars. If you do not know anything about a statement do not draw a ring.

| Topic | At the end of the unit: | KS3 Revision guide | |
|----------------------------------|--|--------------------|-----------|
| 8Ca | | | |
| | Recall what happens in aerobic respiration. | p4 | * * * * * |
| | Model aerobic respiration using a word equation. | p4 | * * * * * |
| | Describe where respiration takes place within the cell | p4 | * * * * * |
| | Compare burning (combustion) and aerobic respiration. | p4 & 49 | * * * * * |
| 8Cb | | | |
| | Describe the functions of the organs in the gas exchange system. | p12 | * * * * * |
| | Describe how muscles cause breathing, and how this causes pressure differences that allow ventilation. | p13 | * * * * * |
| | Explain how the lungs are adapted for efficient gas exchange. | p12 | * * * * * |
| | Explain how specialised cells keep the lungs clean. | p14 | * * * * * |
| 8C Working Scientifically | | | |
| | Calculate ranges and explain their use. | | * * * * * |
| | Calculate means and explain their use. | | * * * * * |
| | Identify anomalous results in data. | | |
| 8Cc | | | |
| | Describe the transfer of substances between blood and tissues. | p12 | * * * * * |
| | Describe and explain the effects of smoking tobacco. | p14 | * * * * * |
| | Describe ways that oxygen supply to tissues can be reduced, and the effect of this. | p14 | * * * * * |
| | Explain the changes in pulse and breathing rate during exercise. | p14 | * * * * * |
| 8Cd | | | |
| | Recall how to detect aerobic respiration. | | * * * * * |
| | Describe how gas exchange occurs in different organisms including plants. | p23 | * * * * * |
| | Compare the human gaseous exchange system with those of other animals. | | * * * * * |
| 8Ce | | | |
| | Recall what happens in anaerobic respiration in humans. | p4 | * * * * * |
| | Explain when aerobic respiration and anaerobic respiration occur. | p4 | * * * * * |
| | Compare aerobic respiration and anaerobic respiration (including word equations). | p4 | * * * * * |
| | Explain the cause of excess post-exercise oxygen consumption (EPOC). | p4 | * * * * * |

8D Unicellular Organisms

Draw a ring around a number of stars for each statement. If you are very confident about a statement, draw your ring around all the stars. If you do not know anything about a statement do not draw a ring.

| Topic | At the end of the unit: | |
|-----------------------------------|--|-----------|
| 8Da | | |
| | Recall the five kingdoms of organisms. | * * * * * |
| | Explain why multicellular organisms need efficient transport systems. | * * * * * |
| | Explain how materials enter and leave unicellular organisms. | * * * * * |
| | Use the characteristics of microorganisms to classify them into kingdoms. | * * * * * |
| 8Db | | |
| | Recall the conditions under which yeast grow quickly. | * * * * * |
| | Recall what happens in aerobic and anaerobic respiration in yeast. | * * * * * |
| | Explain how yeast can be used to make both alcoholic drinks and bread. | * * * * * |
| | Describe how yeast reproduce asexually by budding. | * * * * * |
| | Explain what is happening in the different parts of a growth curve. | * * * * * |
| 8Dc | | |
| | Recall the conditions under which bacteria grow quickly. | * * * * * |
| | Explain why bacteria are used to make yoghurt. | * * * * * |
| | Describe, identify and state the basic functions of the parts of a bacterial cell (soft cell wall, flagella, cytoplasm, cell membrane, chromosome). | * * * * * |
| | Describe how bacteria reproduce asexually by binary fission. | * * * * * |
| | Explain why bacteria grow well in certain conditions. | * * * * * |
| 8Dc Working Scientifically | | |
| | Extract simple information from pie charts. | * * * * * |
| | Present data in pie charts. | * * * * * |
| | Identify when to use a pie chart. | * * * * * |
| 8Dd | | |
| | Recall the conditions under which algae grow quickly. | * * * * * |
| | Describe, identify and state the basic functions of common parts of protocist cells (cell wall, flagella, cilia, pseudopods, cytoplasm, cell surface membrane, mitochondria, chloroplasts, nucleus). | * * * * * |
| | Explain the functions of light and chlorophyll in photosynthesis. | * * * * * |
| 8De | | |
| | Give examples of decomposer microorganisms. | * * * * * |
| | State the names of compounds in which carbon is held in an ecosystem. | * * * * * |
| | Explain the importance of decomposers in an ecosystem. | * * * * * |
| | Model the recycling of carbon in an ecosystem using the carbon cycle. | * * * * * |

8E Combustion

Draw a ring around a number of stars for each statement. If you are very confident about a statement, draw your ring around all the stars. If you do not know anything about a statement do not draw a ring.

| Topic | At the end of the unit: | |
|-----------------------------------|---|-----------|
| 8Ea | | |
| | State the meaning of fuel and combustion. | * * * * * |
| | Describe the reactants and products in the combustion of hydrocarbons. | * * * * * |
| | Name the fuel used in a fuel cell. | * * * * * |
| | Describe the tests for carbon dioxide and water. | * * * * * |
| | Write word equations to model reactions. | * * * * * |
| 8Eb | | |
| | State the meaning of oxidation. | * * * * * |
| | Describe the reactions of metals with oxygen. | * * * * * |
| | Identify reactants and products of oxidation using word equations. | * * * * * |
| | State what happens to mass in a chemical reaction. | * * * * * |
| | Explain changes in mass seen in reactions. | * * * * * |
| | Compare and contrast the oxygen and phlogiston theories. | * * * * * |
| 8Ec | | |
| | Name the three sides of a fire triangle and recognise hazard symbols. | * * * * * |
| | Describe what is meant by an exothermic change. | * * * * * |
| | Explain why different types of fire need to be put out in different ways. | * * * * * |
| | Evaluate data on burning fuels. | * * * * * |
| 8Ec Working Scientifically | | |
| | Identify variables that need to be controlled in an experiment. | * * * * * |
| | Plan ways in which to control variables in an experiment. | * * * * * |
| 8Ed | | |
| | Recall examples of pollutants formed by burning fossil fuels. | * * * * * |
| | Describe the reactions of non-metals with oxygen. | * * * * * |
| | Explain the products of complete and incomplete combustion of fossil fuels. | * * * * * |
| | Explain how sulfur dioxide and nitrogen can cause acid rain. | * * * * * |
| | Explain how pollution from fossil fuel combustion can be reduced. | * * * * * |
| | Evaluate measures for reducing pollution from fossil fuel combustion. | * * * * * |
| 8Ee | | |
| | State the meaning of greenhouse effect, global warming and climate change. | * * * * * |
| | Explain how human activities are affecting global warming. | * * * * * |
| | Explain how methods of controlling carbon dioxide emissions work. | * * * * * |

8G Metals and their Uses

Draw a ring around a number of stars for each statement. If you are very confident about a statement, draw your ring around all the stars. If you do not know anything about a statement do not draw a ring.

| Topic | At the end of the unit: | |
|-----------------------------------|---|-----------|
| 8Ga | | |
| | Describe the physical and chemical properties of metals and relate them to their uses. | * * * * * |
| | Recall some reactions that happen slowly and some that happen quickly. | * * * * * |
| | Describe what catalysts do and some applications of catalysts. | * * * * * |
| | Write word equations for reactions between metals and non-metals. | * * * * * |
| 8Gb | | |
| | Describe what happens when metals react with oxygen. | * * * * * |
| | State the meaning of corrosion and rusting. | * * * * * |
| | Explain how barrier methods (e.g. painting) can be used to stop rusting. | * * * * * |
| | Model reactions using word equations. | * * * * * |
| | Show the products or reactants in a reaction as formulae. | * * * * * |
| 8Gc | | |
| | Describe the test for hydrogen. | * * * * * |
| | Write word equations for the reactions of metals with water. | * * * * * |
| | Use the reactions of metals with water to create an order of reactivity. | * * * * * |
| 8Gd Working Scientifically | | |
| | Explain how to improve the accuracy of an investigation. | * * * * * |
| | Identify repeated measurements and explain the importance of repeatable, reproducible and reliable data. | * * * * * |
| 8Gd | | |
| | Describe what happens when metals react with acids. | * * * * * |
| | Write word equations for the reactions of metals with different acids. | * * * * * |
| | Use the reactions of metals with acids to create an order of reactivity. | * * * * * |
| | Model simple reactions using symbol equations. | * * * * * |
| 8Ge | | |
| | Describe what happens at a material's melting, freezing and boiling point. | * * * * * |
| | Describe what is meant by a pure substance and how melting and boiling points can identify pure substances. | * * * * * |
| | State, with examples, the meaning of an alloy and explain why alloys are made. | * * * * * |
| | Use models to explain why alloys are stronger than the pure metal. | * * * * * |

What could you do to improve? _____

8H Rocks

Draw a ring around a number of stars for each statement. If you are very confident about a statement, draw your ring around all the stars. If you do not know anything about a statement do not draw a ring.

| Topic | At the end of the unit: | |
|---------------|--|-----------|
| 8Ha | | |
| | Recall some uses for rocks. | * * * * * |
| | State what minerals are. | * * * * * |
| | Describe the textures of some rocks. | * * * * * |
| | Explain why some rocks are porous. | * * * * * |
| | Relate features of a landscape to the wearing away of different rocks. | * * * * * |
| 8Hb | | |
| | Name some igneous rocks and describe how igneous rocks are formed. | * * * * * |
| | Explain how the crystal size in igneous rocks depends on cooling rate. | * * * * * |
| | Explain where you might find igneous rocks with small or large crystals. | * * * * * |
| | Name some metamorphic rocks and describe how metamorphic rocks are formed. | * * * * * |
| | Describe the textures and properties of igneous and metamorphic rocks. | * * * * * |
| 8Hc | | |
| | Explain how the three types of weathering break up rocks. | * * * * * |
| | Recall how weathered rocks are eroded and abraded. | * * * * * |
| | Explain why different rock fragment sizes are carried by water and wind. | * * * * * |
| 8Hd | | |
| | Describe the textures and properties of sedimentary rocks. | * * * * * |
| | Name some sedimentary rocks and describe how sedimentary rocks and fossils are formed. | * * * * * |
| | Use the rock cycle model to link the formation of different types of rock. | * * * * * |
| 8Hd WS | | |
| | Describe how the scientific method is used for sciences such as geology. | * * * * * |
| 8He | | |
| | Recall that some metals are found in their native states. | * * * * * |
| | Recall how metals are extracted from ores taken from the Earth's crust. | * * * * * |
| | Explain the advantages of recycling metals. | * * * * * |
| | Describe some of the environmental effects of mining. | * * * * * |

What could you do to improve? _____

8I Fluids

Draw a ring around a number of stars for each statement. If you are very confident about a statement, draw your ring around all the stars. If you do not know anything about a statement do not draw a ring.

| Topic | At the end of the unit: | | |
|-----------------------------------|--|-----------------|-----------|
| 8Ia | | | |
| | Describe the properties of the three states of matter and explain them using ideas about particles. | UK NC, iLS, CEE | * * * * * |
| | Describe how particles move in solids, liquids and gases, how this changes with temperature and what effects this has. | UK NC, iLS, CEE | * * * * * |
| | Explain what density is. | UK NC, iLS, CEE | * * * * * |
| | Use the particle model to explain density changes at different temperatures. | UK NC, iLS, CEE | * * * * * |
| 8Ia Working Scientifically | | | |
| | Use a formula to calculate density. | UK NC, iLS, CEE | * * * * * |
| | Describe how to measure the volume of regular and irregular objects. | UK NC, iLS, CEE | * * * * * |
| 8Ib | | | |
| | Explain how chemical changes are different to physical changes, and recall some examples of each type. | UK NC, iLS, CEE | * * * * * |
| | Recall that ice is less dense than water, and why this is unusual. | UK NC, iLS, CEE | * * * * * |
| | Describe what happens to particles during changes of state, in terms of energy and bonds, and why there is no change in temperature while a substance is changing state. | UK NC, iLS, CEE | * * * * * |
| 8Ic | | | |
| | Use the particle model to describe the causes of pressure in fluids. | UK NC, iLS, CEE | * * * * * |
| | Explain why pressure in a fluid increases with depth. | UK NC, iLS | * * * * * |
| | Explain some effects caused by fluid pressure using ideas about forces. | UK NC, iLS, CEE | * * * * * |
| | Use the particle model to explain why gas pressure changes with temperature, number of particles and volume. | UK NC, iLS, CEE | * * * * * |
| 8Id | | | |
| | Use the idea of upthrust to explain why an object does or does not float. | UK NC, iLS | * * * * * |
| | Recall the factors that affect the amount of upthrust on an object. | UK NC, iLS | * * * * * |
| | Use ideas about density changes to explain how a hot air balloon flies or how the depth of a submarine is controlled. | UK NC, iLS | * * * * * |

| Topic | At the end of the unit: | | |
|------------|---|-----------------|-----------|
| 8le | | | |
| | Describe the ways in which the size of drag forces can be changed. | UK NC, iLS, CEE | * * * * * |
| | Describe the causes of air and water resistance. | UK NC, iLS, CEE | * * * * * |
| | Explain why a vehicle needs a force from the engine to keep moving at a constant speed. | UK NC, iLS, CEE | * * * * * |