Year 8 Science Assessment Criteria : Studying Disease

Green	**Knowledge** I can state the three main microorganisms. I am able to say how diseases are spread. I know that infectious diseases are caused by microorganisms. I know a way the body fights off microorganisms that cause disease. I can describe what biological warfare is. **Skills** ⬚ Read a graph and list the main points shown, with support. Safely grow microorganisms in an agar plate, with support. Research diseases using a given resource.
Pink	**Knowledge** I can state the three main microorganisms. I am able to list three ways diseases are spread. I know that infectious diseases are caused by microorganisms. I know two ways the body fights off microorganisms that cause disease. I can explain what biological warfare is. **Skills** ⬚ Read a graph and list the main points shown. Safely grow microorganisms in an agar plate. Research diseases using resources provided.
Yellow	**Knowledge** ⬚ I can state the three main microorganisms. I am able to list three ways diseases are spread. **I know that** infectious diseases are caused by pathogens. I know two examples of viral and bacterial diseases. I can explain how one disease is spread and the symptoms it has. I know two ways the body fights off microorganisms that cause disease.

		I can explain what biological warfare is. I know that disinfectants kill microbes. I can explain how to use an agar plate to grow microorganisms. **Skills** ▯ Explain patterns show by table and graphs. Grow microorganisms safely in the laboratory. Use at least two sources in your research. Present information researched in more than one way.
	Blue	**Knowledge** I can state the three main microorganisms. I am able to list ways pathogens are spread. I know that infectious diseases are caused by pathogens and give examples of viral and bacterial diseases. I can explain how a disease is spread and the symptoms it has. Giving an example of a viral, bacterial and fungal pathogen. I know two ways the body fights off microorganisms that cause disease. I know how white blood cells prevent disease. I know the role of antibodies. I can explain how a vaccine works and discuss the case for and against their use. I can explain what biological warfare is. I know the difference between disinfectants and antiseptics. I can explain how to use an agar plate to grow microorganisms. **Skills**▯ Explain patterns show by table and graphs. Grow microorganisms using aseptic techniques. Use a variety of sources in your research. Present information researched in a variety of ways.
	Salmon	**Knowledge** ▯ I can state the three main microorganisms. I am able to list ways pathogens are spread. I know that infectious diseases are caused by pathogens and give examples of viral and bacterial diseases. I can explain how a disease is spread and the symptoms it has. Giving an example of a viral, bacterial and fungal pathogen.

	I know two ways the body fights off microorganisms that cause disease.
	I know how white blood cells prevent disease.
	I know the role of antibodies in providing long term immunity.
	I can explain how a vaccine works and discuss the case for and against their use.
	I can explain what biological warfare is and can discuss the pros and cons of using it.
	I know the difference between disinfectants and antiseptics and explain how you could test to see how effective they are.
	I can explain how to use an agar plate to grow microorganisms.
	I can use the immune response model to explain how allergies are caused, how vaccines work and why some people never catch a disease.
	Skills
	Explain patterns show by table and graphs.
	Grow microorganisms in the lab using aseptic techniques.
	Use a variety of sources in your research, identifying the most reliable.
	Present information researched in a variety of ways, referencing your sources.
	I use scientific language in all of my work.

Separating Mixtures

Green	**Knowledge** **I know the term dissolving.** **I know the term solubility.** **I know that rock salt contains dirt.** **I know that graffiti is hard to remove.** **I know that special solvents are needed to remove graffiti.** **I know that gases can be cooled to give liquids.** **I know that seawater can be purified to produce water.** **I know the terms filtration, crystallisation, distillation and chromatography and some differences between them.** **Skills** ⬚ **I can identify the apparatus needed to investigate the solubility of a solute, with support.** **I can safely follow a practical method to test factors that affect how quickly something dissolves, with support.** **I can explain the reasons for some safety precautions used during practical work.** **I can identify some laboratory apparatus used to separate mixtures.** **I can identify control variables (things we need to keep the same) in a given method.** **I know a range of scientific words to use when presenting scientific ideas.**
Pink	**Knowledge** **I know what dissolving means.** **I know what solubility means.** **I know that rock salt contains dirt.** **I know that graffiti is hard to remove.** **I know that special solvents are needed to dissolve graffiti.** **I know that gases can be cooled to give liquids.** **I know that seawater can be purified to produce water.** **I know the difference between filtration, crystallisation, distillation and chromatography.** **Skills** ⬚

		I can identify the apparatus needed to investigate the solubility of a solute. I can safely follow a practical method to test factors that affect how quickly something dissolves. I can explain the reasons for safety precautions used during practical work. I can identify some laboratory apparatus used to separate mixtures. I can identify control variables in a given method. I use a range of scientific words when presenting scientific ideas.
Yellow		**Knowledge** ⬜ I know what dissolving means and how to make things dissolve. I can compare measures of the solubility of a solute, e.g., sugar. I know that the impurities in rock salt are insoluble. I can identify the changes of state in distillation. I know how to test various solvents to find the best one to dissolve graffiti. I can describe how a condenser works. I can describe a method to purify seawater. I can match the separation techniques of filtration, crystallisation, distillation and chromatography to the types of mixtures they are used to separate. **Skills** ⬜ I can use an investigation framework to plan an experiment to test factors that affect the solubility of a solute. I can identify common safety precautions used during practical work. I can name and draw the laboratory apparatus used to separate mixtures. I can identify independent, dependent and control variables in an investigation plan. I use a range of scientific words appropriately when presenting scientific ideas.
Blue		**Knowledge** I can explain dissolving using some scientific terminology. I can interpret solubility data (in graph or table form) to describe trends in solubility. I can explain the changes of state involved in distillation. I can assess the benefits and problems of using particular solvents.

	I can explain a method to purify seawater. **I can describe why the separation techniques of filtration, crystallisation, distillation and chromatography are used to separate specific types of mixtures.** **Skills⬚** **I can plan an experiment to test factors that affect the solubility of a solute.** **I can identify safety precautions used during practical work.** **I can draw accurate, labelled diagrams of the laboratory apparatus used to separate various mixtures.** **I can identify variables in an investigation plan.** **I use a wide range of scientific words, accurately, when presenting scientific ideas.**
Salmon	**Knowledge ⬚** **I can explain dissolving confidently using correct scientific terminology.** **I can interpret solubility data (in graph or table form) to describe trends in solubility and identify and explain anomalous results.** **I can explain the changes of state involved in crystallisation and distillation.** **I can assess the hazards of using materials such as flammable solvents.** **I can compare and evaluate different methods to purify seawater.** **I can explain why the separation techniques of filtration, crystallisation, distillation and chromatography are used to separate specific types of mixtures.** **Skills** **I can plan and evaluate an experiment to test factors that affect the solubility of a solute.** **I can identify and explain the safety precautions needed during specific experiments.** **I can draw accurate, labelled diagrams of the laboratory apparatus used to separate various mixtures.** **I can identify variables in an investigation plan. ⬚** **I use a wide range of scientific words, accurately, when presenting scientific ideas.**

Space

Green	**Knowledge**
	I can recall the names of some planets in the Solar System
	I can describe the motion of the Earth
	I can describe differences on Earth between summer and winter
	I can describe the moon and where it is located
	I can describe the use of satellites and methods of exploring space
	I can describe the attractive force of gravity
	I know that the main star of our solar system is the Sun
	Skills
	I have used modelling to represent scientific theory
	I have used graph skills to show patterns in data, with support
	I have researched and presented data
	I have used calculations within my work, with support
Pink	**Knowledge**
	I can recall the order of the planets in the Solar System
	I can describe the motion of the Earth
	I can describe differences on Earth between summer and winter
	I can describe the moon and where it is located (and why)
	I understand the use of satellites and methods of exploring space
	I can describe the attractive force of gravity
	I understand that the main star of our solar system is the Sun
	Skills
	I have used modelling to represent scientific theory
	I have applied graph skills to show patterns in data
	I have researched, shared and presented data to my peers

		I have used calculations within my work
Yellow		**Knowledge**
		I can describe features of some of the planets of the solar system
		I can explain what a day and a year mean in terms of the Earth's motion
		I can describe the differences between the four seasons
		I can describe and explain the phases of the moon
		I can describe the uses of satellites in communications
		I can explain the factors that increase gravity and can describe the difference between mass and weight
		I can describe how a star is formed and describe its life cycle
		Skills
		I have used modelling to represent scientific theory
		I have applied graph skills to show patterns in data
		I have researched, shared and presented data to my peers
		I have used calculations within my work
Blue		**Knowledge**
		I can explain the difference between a planet and a star
		I can explain how our ideas about the motion of the Earth are different from the ones people held in the past
		I can explain the reasons as to why there are four seasons
		I can relate the phases of the Moon to the motion of the Earth and the Moon
		I can describe the range of other uses of satellites and space probes
		I can explain the relationship between gravity and weight and apply this relationship to explain how weight changes on different planets
		I can describe a fusion reaction and explain the life cycle of a star
		Skills
		I have used modelling to represent scientific theory
		I have applied graph skills to show patterns in data
		I have researched, shared and presented data to my peers

	I have used calculations within my work
Salmon	**Knowledge** I can explain patterns in data about the planets in the solar system I can explain the reasons for the length of our day and year I can explain the different conditions in different parts of the world in terms of the motion and alignment of the Earth I understand what causes a lunar or solar eclipse I can relate the nature of the orbit of a satellite to its function I can explain the role of gravity in maintaining planetary orbits I can explain a fusion reaction and the role of fusion energy I can describe the formation of a supernova **Skills** I have used modelling to represent scientific theory I have applied graph skills to show patterns in data I have researched, shared and presented data to my peers I have used calculations within my work