

KS3 Biology – Microbes & Disease – Learning Objectives

	Beginning	Developing	Secure	Embedding	Extending	Excelling
Types Of Microbes	Know the names of some types of microbes.	Give some examples of each type of microbe.	Describe the features of each type of microbe, and compare their sizes.	-	-	-
Growing Microbes	-	Explain why precautions must be taken to ensure samples are produced safely, and preventing cross-contamination.	Demonstrate aseptic techniques to prepare and handle a petri dish. Describe the ideal conditions required for microbes to reproduce. Discuss how the number of microbes increases exponentially.		-	-
Useful Microbes	-	Recall that yeast is a fungus that can be used to make bread rise, that fermentation to produce alcohol in drinks uses microbes, and that yoghurt is produced using bacteria.	Explain the uses of microbes in the food industry, and explain the precautions necessary when using microbes in the food industry. Discuss how yeast respire anaerobically to produce carbon dioxide to make bread rise, and discuss the variables that affect the rate at which yeast acts in a mixture (including limiting factors). Describe how yeast reproduces by budding.			-
Transmission and Defences	Recall that microbes cause disease.	Recall a number of diseases, and for each, describe the methods of transmission, the symptoms and any preventative measures and/or treatments. Describe how the body's natural defences help to prevent diseases entering the body (eg. mucus, ciliated cells, skin, white blood cells). Discuss the formation of antibodies, and how these are used to prevent further disease. Describe some methods of stopping microbes from causing diseases.			Explain why antibodies need time to be made.	-
Immunity and Vaccination	Recall that vaccinations are a method of preventing someone from catching a disease.	Recall that a vaccination contains a small amount of a disease sufficient to allow antibodies to form to fight further exposure to the disease.	Explain the difference between active and passive immunity. Explain how people may become naturally immune to a disease.		Discuss some case studies in which immunisation programmes have helped eliminate, or prevent the spread of disease.	-

* Objectives covering more than one grade are assessed based on the level of scientific detail and language used by the learner.