B3.2 Pre-Test Mark scheme

Qu	Answer	Marks	Supporting information for fix-it tasks
1	B	1	Answering A shows that pupils have confused the terms ecosystem and habitat. Answering C shows that pupils are aware that organisms interact but have not managed to identify that this includes interactions with plants/producers as well as animals. *Task: State the definitions of the following terms (from B1.3): organism, population, community, habitat, ecosystem.*
2	B	1	Answering A shows that pupils have incorrectly suggested that plants and animals compete for the same resources. Answering C shows that pupils have not understood that animals also compete for mates to reproduce and for territory (space). *Task: Explain why animals compete for mates and for territory. Compare the resources that plants and animals compete for.*
3	A	1	Answering B or C shows that pupils do not understand where animals get energy from. *Task: Explain where plants get their energy from, and where animals get their energy from.*
4	C	1	Answering A shows that pupils know that plants need light and water to be able to survive but have not recalled that they also need carbon dioxide for the process of photosynthesis. Answering B shows that pupils have confused the reactants and products of photosynthesis. *Task: Write the photosynthesis word equation, and describe where plants get each of the raw materials from.*
5	A	1	Answering B shows that pupils have the misconception that a population or species only refers to animals. This misconception is linked to

			thinking that plants are not alive because they do not move. Answering C shows that pupils have confused the terms population and community. *Task: Give an example of a population, a community, and a habitat within a desert ecosystem.*
6	B	1	Answering A or C shows a lack of understanding of the difference between biotic and abiotic factors. *Task: State the definition of biotic and abiotic factors and give 2 examples of each.*
7	A	1	Answering B shows that pupils are not secure with the meaning of systematic sampling and that it should be used when looking at the effect of a factor. Answering C shows that pupils know that a quadrat should be used to count the number of organisms (daisies) in an area, but have not understood that the quadrats should be randomly positioned/at random coordinates in order to get a representative sample which can then be extrapolated (pupils are not required to do this calculation). *Task: Describe the method of sampling you would use when:* *- Investigating the effect of light intensity on growth of grass* *- Estimating the number of plants in a forest.*
8	C	1	Answering A shows that pupils have not understood the difference between a primary consumer and a secondary consumer. Answering B shows that pupils have assumed that a predator is any species that feeds on another species (rather than a species that feeds on other animals). *Task: State the definition of the following terms: Herbivore, Carnivore, Omnivore, Producer, Primary Consumer, Secondary Consumer.* *Label each of the species in this food web with one or more of these terms.*

9	C	1	Answering A shows that pupils have incorrectly suggested that primary consumers feed on other animals, linked to the misconception that plants are not counted as a trophic level. Answering B shows that pupils have assumed the term primary means that it comes first, so must be the first level of the food chain. *Task: Put these species into a food chain; shark, plankton, seal, herring. Describe the species at each trophic level as producer, primary consumer etc.*
10	B	1	Answering A shows that pupils have not understood the feeding relationship between the wolf and the rabbits. Answering C shows that pupils have not understood the relationship between rabbits and grass. *Task: Explain why the population of wolves would decrease if there was a disease in the rabbit population.*