


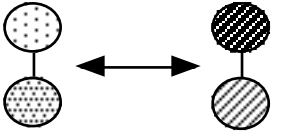
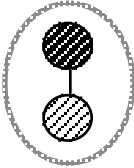
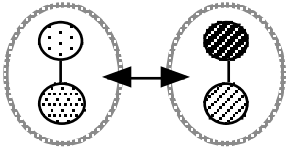
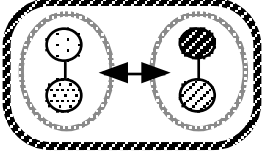
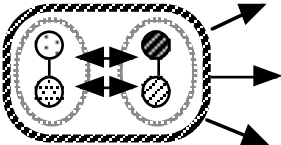


Generic SCIENCE level descriptions	Visual interpretation	Plant Leaves/Nutrition Level Samples
<p>Awareness - Level 1 students Are aware of matter and energy and living things. Can observe objects and observe changes. Can distinguish between objects. Can distinguish between changes.</p>		<p>Level 1 Students are aware of the characteristics of plants (cf animals). They know the main parts of plants. <i>Lower Primary school students achieve this.</i></p>
<p>Describing - Level 2 students Can describe and name objects. Can describe and name features of objects. Can describe changes to objects. Can describe how. Can prepare lists.</p>		<p>Level 2 Students can describe plants and their leaves in terms of shape, colour, vein structure; how leaves can change colour and list food leaves.</p>
<p>Patterns - Level 3 students Can describe patterns in objects and in features of objects. Can classify and sort objects and features. Can organise observations and information. Can link cause and effect.</p>		<p>Level 3 Students can describe patterns in leaf structures; classify leaves according to structure; meaningfully sketch patterns of leaves; link changes in colour to seasons.</p>
<p>Comparing - Level 4 students Can compare characteristics and features. Can identify processes that are occurring. Can describe relationships and interactions that are occurring. Can make predictions based on data.</p>		<p>Level 4 Students can compare leaves from monocots and dicots; describe the effect of lack of sunlight on leaves; describe relationship between animals (herbivores) and food leaves. <i>This is typical of Year 8 students, but some will not reach this level until later years.</i></p>
<p>Models - Level 5 students Can use models to explain concepts. Can use concepts to explain observations. Can apply concepts to new areas. Understands experimental design procedures. Can assess ideas and information.</p>		<p>Level 5 Students can describe photosynthesis and its role in plant growth; and design experiments to test for photosynthesis. <i>This is the first level of abstract thinking. Many students will reach this level in Year 9. Some Year 8s will already be there, but some year 9s will not cope with models until much later.</i></p>
<p>Quantitative - Level 6 students Can describe models quantitatively. Can apply quantitative information. Can apply laws. Can explain interactions occurring. Can present relevant evidence.</p>		<p>Level 6 Students can use chemical equations and energy concepts to describe photosynthesis. Carbon cycle. Phototropism. <i>This is typical of top year 9 and most year 10 students.</i></p>
<p>Theories - Level 7 students Can apply theories and principles to explain observations. Can describe and analyse systems. Can evaluate theories, systems and ideas. Can predict based on system wide evidence.</p>		<p>Level 7 Students can describe the photosynthetic structures of a leaf; and plant mechanisms that control photosynthesis. <i>These are higher level concepts that only the more advanced students can cope with – usually upper school Biology students.</i></p>
<p>Complex Systems - Level 8 students Can explain complex systems and complex interactions. Can apply concepts, models, laws, theories and principles to complex systems. Can use models to compare, validate or refute ideas. Can use knowledge, principles, theories and supporting data to evaluate and make recommendations.</p>		<p>Level 8 Students can explain complex systems and interactions, such as the transport systems in plants, cell division and growth, the role of plants (and photosynthesis) in an ecosystem.</p>