

## Activity 3

### Example initial assessment

#### Photosynthesis assessment

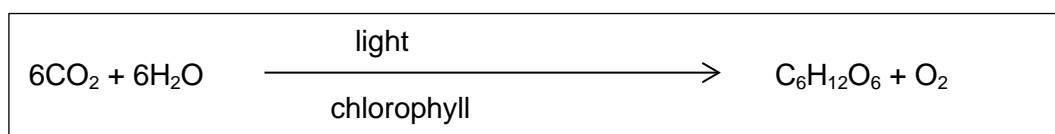
**Total 30 marks**

1. *One mark each correct gap filled.*

Plants can carry out photosynthesis, a process where **carbohydrates** are manufactured from **raw** materials using energy from **light**. One of these material is **water**, which is taken into the plants in the **roots** and is transported to the leaves in the **xylem** tissue. The other raw material is **carbon dioxide**, which enters the leaves through the open **stomata** during the day. The sugar **glucose** is synthesised as a result of photosynthesis, and the waste product of photosynthesis is **oxygen**. To absorb the light energy, the photosynthetic pigment **chlorophyll** is required. The organelle that contains this pigment is known as the **chloroplast**. In photosynthesis, the pigment is responsible in the transfer of energy into **chemical** energy in molecules, for the synthesis of the sugar. This sugar can be converted to a storage molecule known as **starch**

**14**

2. *Two marks for completely correct equation; one mark for one error only.*



**2**

3.

leaf exposed to light = purple and leaf covered = yellow ;  
 hydrogen carbonate indicator changes colour with different concentrations of carbon dioxide ;  
 change to purple indicates low concentration of carbon dioxide ; ora for yellow  
 carbon dioxide used for photosynthesis in leaf in light ;  
 leaf in dark changes because carbon dioxide given out in respiration ;

**max 3**

4.

**C ;**

starch is a product of photosynthesis ;  
 green areas contain chlorophyll so photosynthesis occurs ;  
 white areas have no chlorophyll so do not photosynthesise (hence no starch made) ;

**max 3**

5.

- 1** (waxy) cuticle ;
- 2** palisade mesophyll, cell / layer ;
- 3** spongy mesophyll, cell / layer ; **A** spongy cell
- 4** guard cell ; **R** stoma
- 5** lower, epidermis / epidermal cell ;
- 6** intercellular air space ;
- 7** vein / vascular bundle ;
- 8** upper, epidermis / epidermal cell ;

**8**