

## Assessment for learning in STEM teaching

Acting on evidence in discussion

### Extract of Photosynthesis Lesson (April 2000)

(Teacher = T and students referred to by name)

**T:** We are going to look at the way plants feed today. I know you've done some work on this in your primary school and I am going to give you time to think that over and to tell your neighbour about what you know, or think you know already.

*Pupils start looking at one another and a few whispers start.*

Hang on. Not yet. I want to give you something to think about.

*T. produces two geranium plants from behind his desk. One is healthy and large and the other is quite spindly.*

Now when Mrs. James potted up these two plants last spring, they were about the same size but look at them now. I think they might have been growing in different places in her prep room. I also think it's got something to do with the way that plants feed. So have a think then talk to your partner. Why do you think these plants have grown differently?

*Class erupts into loud discussion in pairs. T. goes over to sidebench and checks apparatus. After 4 minutes, T goes back to front and stops the class discussion.*

**T:** Okay. Ideas? *About half the class put up their hands. Teacher waits for three seconds. A few more hands go up.* Monica – your group? Pair?

**Monica:** That one's grown bigger because it was on the window. *Pointing.*

**T:** On the window? Mmm. What do you think Jamie?

**Jamie:** We thought that.

**T:** You thought....?

**Jamie:** That the big 'un had eaten up more light.

**T:** I think I know what Monica and Jamie are getting at, but can anyone put the ideas together? Window – Light – Plants?

*Again about half the class put up their hands. The teacher chooses a child who has not put up their hand.*

Richard.

**Richard:** Err yes. We thought, me and Dean, that it had grown bigger because it was getting more food.

*Some pupils stretch their hand up higher. T. points to Susan and nods.*

**Susan:** No it grows where there's a lot of light and that's near the window.

**T:** Mmmm. Richard and Dean think the plants getting more food. Susan ... and Stacey as well? Yes. Susan thinks it's because this plant is getting more light. What do others think? Tariq.

**Tariq:** It's the light cos its photosynthesis. Plants feed by photosynthesis.

*T. writes photosynthesis on the board.*

**T:** Who else has heard this word before? *Points to board*  
*Almost all hands go up.*  
Okay. Well can anyone put Plant, Light, Window and Photosynthesis together and tell me why these two plants have grown differently? *T. waits 12 seconds. Ten hands went up immediately he stopped speaking. Five more go up in the pause.* Okay. Carolyn?

**Carolyn:** The plant .. The big plant has been getting more light by the window and cos' plants make their own food by photosynthesis, its ....

**Jamie:** Bigger.

**T:** Thanks Jamie. What do others think about Carolyn's idea? *Many pupils nod .*  
Yes its bigger because it has more light and can photosynthesise more. So Richard and Dean how does your idea fit in with this?

**Dean:** It was wrong sir.

**Richard:** No it wasn't. We meant that. Photosynthesis. Plant food.

**Dean:** Yeah.

**T:** So. Can you tell us your idea again but use the word photosynthesis as well this time?

**Richard:** Photosynthesis is what plants do when they feed and get bigger.

**T:** Not bad. Remember that when we come to look at explaining the experiment that we are going to do today.