

# Preparing good explanation

"If you can't explain it simply, you don't understand it well enough."

Albert Einstein

# With successful explanations pupils:

- have a good visualisation and understanding of the new idea and know how it fits with their existing knowledge and understanding;
- have understood and internalised the key features of the idea so they are able to restate it in their own words;
- are able to use appropriate models and analogies in restating their ideas and explaining them to others;
- know how to proceed with their learning and what to do next.

# Purposes of explanation

- purposes and objectives of the lessons;
- processes, procedures and skills (explaining how);
- cause and effect (explaining why);
- relationships (how one factor affects another over time);
- concepts (often abstract);
- attitudes and values (involving some personal judgement).

# Characteristics of good explanations

- • clear structure
- • key features identified
- • dynamic opening
- • clarity – using voice and body
- • signposting
- • examples and non-examples
- • model and analogy
- • props
- • questions
- • connections to pupils' experience
- • repetition
- • humour

# Common pitfalls

- Pupils do not appear to be interested
- Explanations are overlong, pupils lose interest
- Explanations do not appear to lead to greater understanding and may create greater confusion
- Explanations of concepts that only involve talk
- Explanations do not allow for checking of pupils' developing understanding
- Providing explanations that are unnecessary
- Not treating pupils' questions seriously

# TIPS ON EXPLAINING

- **1. Improving Clarity: Avoid pronouns and use nouns instead.**
- **2. If you don't know the answer, what should you do?**
- **3. Provide a road map. What is coming, and why? Set up a “frame” for what you are going to say.**
- **4. Look Out for Potential Sources of Confusion**

# EXPLAIN AT THE RIGHT LEVEL & HOW TO FIND THE RIGHT LEVEL

- **1. General Principle** -- try to think like a student, not like a professor.
- **2. Probe First.** Before you start to explain a topic or problem, try find out exactly where the student is stuck.
- **3. Explain in Small Bites** Explain a short piece of a problem at a time
- **4. Don't Start too Far Back.** When a student asks a specific question, try to answer it without going over a lot of background material.

- **5. Don't assume too much.** Remember that your students don't have as much background as you do, so you will probably have to explain things that seem obvious to you.
- **6. Ways to get the students to tell you what they need to know – How to figure out where they are at:**
  - *A. Collect Questions*
  - *B. The Old Card Trick*
  - *C. Ask **Them** a Question*

# Short List of What NOT to Do

- 1. Draw/show a confusing diagram
- 2. Do some blackboard carpentry.
- 3. Stand in front of what you wrote.
- 4. Face the board as you talk.
- 5. Write in corners of board or wherever there is space.
- 6. Use jargon, abbreviations !

- 7. Erase what you just wrote before everyone has finished copying it down.
- 8. Skip important steps. Start explaining in the middle.
- 9. Take a lot of time explaining the obvious.
- 10. Write too small or in unintelligible handwriting.
- 12. Mumble.

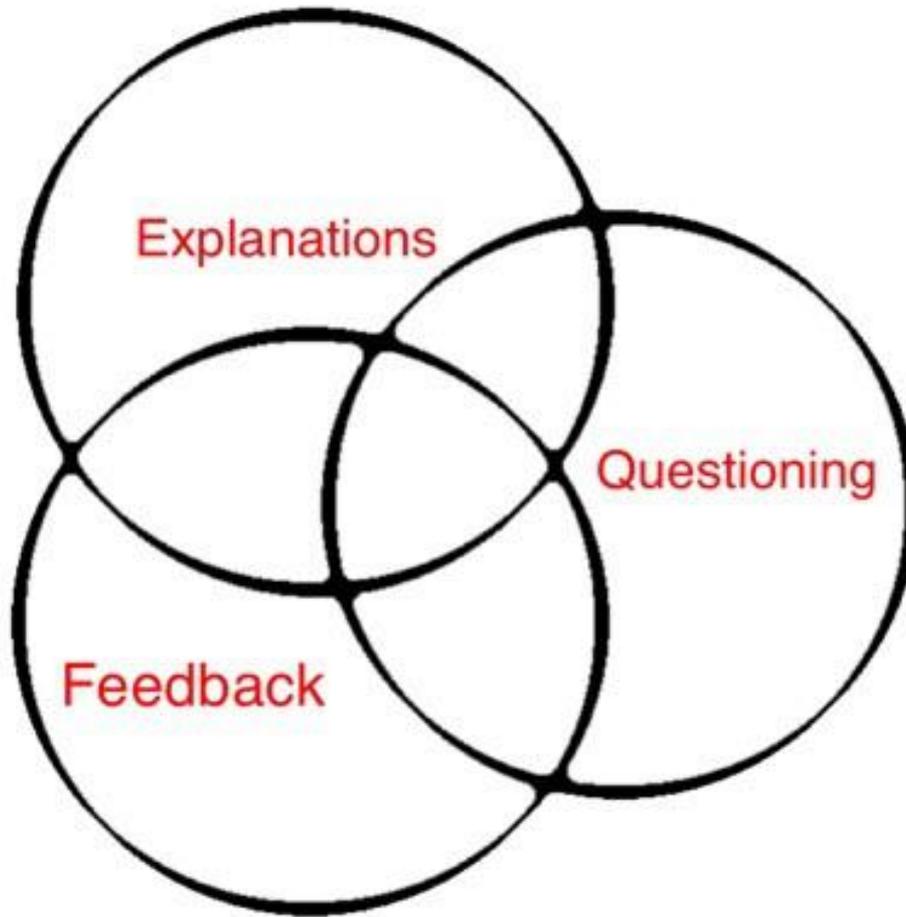
- 13. Talk too fast.
- 14. Stare at the floor.
- 15. Say something very complex and write nothing on the board.
- 16. Insult the students – make fun of them (or their ignorance) when they ask questions, and berate them when they don't speak up.
- 17. Explain how stupid, worthless, lazy, pampered etc. students are nowadays. Not like when I was a student.

# Tricks

- **1. Analogies**
- **2. Models**
- **3. Using the Blackboard**
- **4. Handouts.**

- Getting students to explain ideas to the teacher and to each other is a great way to determine the depth of understanding.

# the 'holy trinity' of teacher practice



**Thank you for your attention!**

