

Investigating with ICT

Objectives

By the end of this session teachers will:

- have considered some strategies for teaching using ICT;
- have explored some mathematical problems using ICT;
- have practised using mathematical software.

Resources

For the trainer

- Computer with data projector, Microsoft PowerPoint and Presentation 15.ppt, and *Autograph*
- OHP calculator, real or simulated
- Whiteboard or flipchart
- *Curriculum Standards for mathematics: Grades K to 12*

For each school group

- Computer with *Autograph*
- Calculators

For each teacher

- *Teacher's pack*
Handout 15.1
- *Curriculum Standards for mathematics: Grades K to 12*

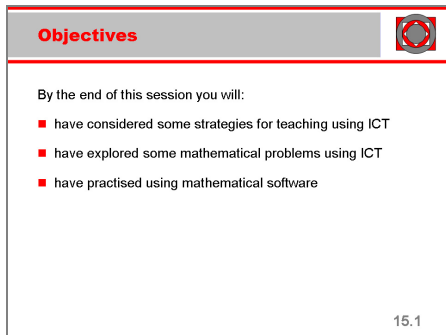
Session outline

Pedagogical issues Slide 15.1–15.2	Whole group presentation and discussion	15 minutes
Problem solving Handout 15.1	Whole group presentation and paired work Task 1: Problem solving using ICT	50 minutes
Conclusion Slide 15.3	Summary of key points	10 minutes

Pedagogical issues

15 minutes

Refer to **slide 15.1**.



Slide 15.1: Objectives

By the end of this session you will:

- have considered some strategies for teaching using ICT
- have explored some mathematical problems using ICT
- have practised using mathematical software

15.1

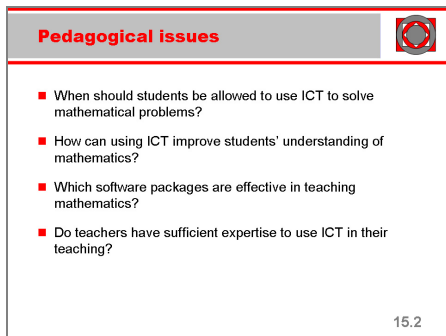
Before the session starts, brief any interpreter about the key points of the session.

Check that pairs of teachers will have access to a computer and that the software is loaded and running.

Load **Presentation 15.ppt**.

Explain that this session will allow all teachers to practise using software packages to explore mathematical problems. As they are working they should consider how they are going to plan their teaching to integrate the use of ICT. They need to consider some of the issues that often concern teachers.

Refer to **slide 15.2**.



Slide 15.2: Pedagogical issues

- When should students be allowed to use ICT to solve mathematical problems?
- How can using ICT improve students' understanding of mathematics?
- Which software packages are effective in teaching mathematics?
- Do teachers have sufficient expertise to use ICT in their teaching?

15.2

Ask teachers to consider the benefits of using ICT to solve mathematical problems. There are advantages and disadvantages. Get teachers to list these, put them on the flipchart and discuss them. Stress that it is important to recognise the need to plan ICT activities and to be clear about when and when not to use ICT.

Problem solving

55 minutes

Task 1: Problem solving using ICT

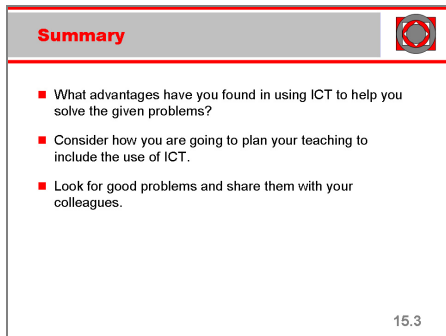
Refer to **Handout 15.1**. Ask teachers to select some problems to work on. Get them to think about the teaching strategies that they might use.

When teachers have completed most of the exercise go through the questions and discuss teaching points. Ask teachers to demonstrate their solutions.

Conclusion

10 minutes

Refer to **slide 15.3**.



The slide is titled 'Summary' and contains three bullet points. It also features a small icon of a gear with a red circle around it in the top right corner and the number '15.3' in the bottom right corner.

- What advantages have you found in using ICT to help you solve the given problems?
- Consider how you are going to plan your teaching to include the use of ICT.
- Look for good problems and share them with your colleagues.

During the workshop teachers have been doing many activities using mathematical software. Use this opportunity to summarise the various ways in which ICT can be used in the classroom. Ask teachers to discuss the advantages of using ICT in their groups.

Ask each group for feedback and put key points on the flipchart. Discuss any issues and help teachers to resolve any difficulties.

Emphasise the need for careful planning. Discuss how teachers can work together and share resources.

