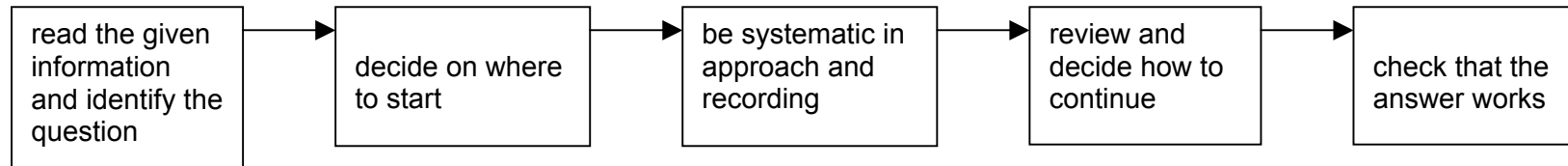


Tackling a problem or puzzle



Teaching approaches include:

- presenting problems with too little or too much information that require the children to decide what extra they need or what they can discard;
- using the same problems more than once to demonstrate alternative problem-solving strategies the children can use;
- comparing problems of different types to demonstrate why one approach is more effective than another;
- asking children to present a problem of a type similar to the ones they have been solving, given a bit of information and a context;
- offering children four problems, say, with two of the same type, that the children must identify and solve in the same way;
- presenting children with alternative strategies and solutions that help them to make decisions about how to start a problem;
- coaching children on how to present their solutions during the lesson, using a common vocabulary that everyone understands such as listing, sorting, reordering;
- giving children time to practise a strategy by solving part of a problem or starting half-way in and then working backwards to get a full solution.

Problem solving strategies

Types of problems and appropriate strategies

Finding all possibilities	Logic puzzles	Finding rules and describing patterns	Diagram problems and visual puzzles
<ul style="list-style-type: none"> • Have a system for finding the possibilities, e.g. start with the smallest number • Check for repeats • Know when all possibilities have been found • Organise the recording of possibilities, e.g. in an ordered list or table 	<ul style="list-style-type: none"> • Identify the given facts and prioritise them • Look for any relationships and patterns in the information given • Use one piece of information in the problem and see what effect it has • Choose and use a recording system to organise the given information • Check that the answer meets all the criteria 	<ul style="list-style-type: none"> • Decide on the information you need to describe and continue the pattern • Give examples that match a given statement and examples that don't • Describe a rule of a pattern or relationship in words or pictures • Predict the next few terms in a sequence to test the rule • Use a rule to decide whether a given number will be in the sequence or not 	<ul style="list-style-type: none"> • Identify the given information and represent it in another way • Use a systematic approach to solve the problem and a way of recording if necessary • Use drawings or annotations to help • Visualise the problem using familiar shapes or patterns • Try other possibilities to check the solution