

Introducing Rectangles step-by-step

- Put up the first examples, using different colours for the rectangles if you have them.
- Have the class figure out the rules.
- You may need to emphasise that a square is indeed a rectangle. I usually ask something like “are puppies animals?” and talk about special cases.

| | | | | |
|---|---|---|---|---|
| 3 | 3 | | | |
| | | 4 | | 3 |
| | | | 2 | |
| 2 | | | 3 | |
| | 5 | | | |

- Then work through the second example together, insisting that they use words to describe what they want you to do and that they justify their choices – each one should be the **only possible choice** at that point.

- While some students will be able to produce long chains of logic, try to encourage short ones so that the entire group can follow (“where do we know *for sure* a rectangle has to go?”)
- A useful technique that some people miss is to look for a square which is reachable by only one number, such as the one marked *.

| | | | | | | |
|---|---|--|---|---|---|---|
| | * | | 2 | | | |
| | 2 | | | | 2 | 2 |
| 4 | 4 | | | | | |
| | | | 8 | | | |
| 2 | | | | 6 | | |
| | | | 2 | | | 8 |
| | | | | 7 | | |

- In a well-constructed puzzle, there is only one possible answer.
- Hand out the first sheet and start walking around; most students don’t need a lot of help. If someone is stuck, the best thing is to erase it all and start again – somewhere they probably guessed or miscounted squares.
- When a student has finished the sheet and you have checked it, give the student the next sheet. I use different colours for different levels, so it is easy to figure out who needs which sheet next.