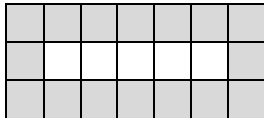


Tiles	
Problem wording	<p>A school wants to re-floor all its corridors, where the tiles are in very poor condition. Its principal decides to lay white and grey tiles on all the floors. All the tiles are square and of the same size and are to be laid in all the corridors in the following pattern.</p> <div style="text-align: center;">  </div> <p>The school asks a company to replace the floors in all the corridors. We want you to help the masons answer some questions before they can start to work.</p> <ol style="list-style-type: none"> 1. How many grey tiles do they need for a floor with five white tiles? 2. Since some corridors are longer than others the masons need different numbers of tiles for each corridor. How many grey tiles do they need for a floor with eight white tiles? 3. How many grey tiles do they need for a floor with 10 white tiles? 4. How many grey tiles do they need for a floor with 100 white tiles? 5. The masons always lay the white tiles before the grey ones. How can they know how many grey tiles they need if they've already laid the white tiles? 6. In some corridors, the workers mistakenly laid the grey tiles before the white tiles. They laid 20 grey tiles. How many white tiles do they need? How did you find the answer? 7. In another corridor where the masons laid the grey tiles before the white ones, they laid 56 grey tiles. How many white tiles do they need? How did you find the answer?
Purpose	<ul style="list-style-type: none"> • To establish the relationship between the independent and dependent variables. • To use a number of mathematical representations to express the regularities recognised. • To generalise the mathematical relationship irrespective of the value of the independent variable.
Suggestions for classroom delivery	<p>Students should be allowed sufficient time to understand the problem involved in the task and absorb all the numerical-geometric information required to answer the questions.</p> <p>They should also be provided sufficient space to explain how they found their answers. Teachers should look at more than just the numerical answer to each question when assessing students' grasp of the concepts involved.</p>