

**4 a, b**

6	As the bicycle speeds up, the friction and air resistance forces get bigger and bigger.
7	Eventually they balance the force from the pedals.
5	The bicycle goes faster.
1	The bicycle is not moving to start with, so the force from the pedals is much greater than friction forces.
2	The bicycle starts to move.
4	The force from the pedals is still greater than the friction forces.
9	This is the top speed of the bicycle.
3	When the bicycle is moving slowly, the friction forces are not very big.
8	When this happens the bicycle will continue to move at the same speed.

**5 a** They will be smaller.

**b** It will be faster, because she will be able to go faster before the friction forces balance the force she can put on the pedals.

**6** When you first hang something on a force meter the forces are balanced so the spring begins to stretch. As the spring stretches it produces a bigger force.

Eventually the forces are balanced, and the force meter shows the weight of the object.

**7** The weight will be stronger than the force from the spring, so the mass will move downwards. When the spring has stretched further, the forces will be balanced again and the force meter will show the new weight.