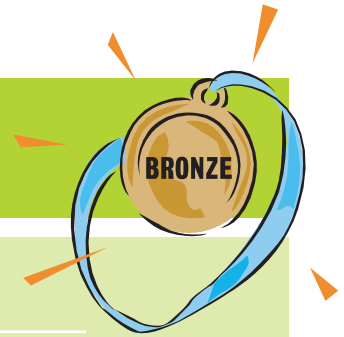




Friction - Slip or Stick



EQUIPMENT	Wooden plank, Length of plastic pipe (e.g. Wavin), Coins, Rubbers, Marbles, Empty tin with rim (e.g. Bisto), Book.
PREPARATION	Collection of materials.
BACKGROUND INFORMATION	<p>Friction is a force that tries to stop things sliding over each other. There is more friction between rough surfaces than between smooth surfaces.</p> <p>It has its good points and bad points. Friction is needed for gripping things, e.g. a goalkeeper's gloves. You could not walk if there was no friction between your shoes and the ground, and a car would skid all the time if there was no friction between the tyres and the ground. Brakes work because of the friction between the brake pads and wheels. However, you may also want to reduce friction (e.g. in an engine by adding oil) as the engine would get very hot on account of the friction and the parts would also wear away quickly.</p>
SKILLS	Investigating and experimenting Observing
ACTIVITIES	<p>Rub your hands. What do you notice? (<i>Hands get hot due to friction</i>). Rub soap on your hands. What do you notice? (<i>Soap reduces friction – i.e. makes your hands more slippery</i>).</p> <p>Slide different objects down different slopes – try coins, rubbers, etc. Which ones slide most easily and on which slopes?</p> <p>Ball bearings Swivel a book on the top of a tin. Now put some marbles in the rim of the tin and swivel the book again. Do you notice any difference? (<i>The marbles reduce the friction and enable the book to move more easily. This is the principle on which ball bearings are based, e.g. in lawnmower wheels</i>).</p>
SAFETY	–

