

CREATIVE DESIGN ACTIVITY - 1

How can plastics help us to have fun safely when we are riding on our scooters?

Protective gear can be made from different types of plastics which have different properties - all of which can help prevent high-impact injuries.



This drawing by Martin Brown (the artist from Horrible Histories) shows Mo the MoDiP girl, wearing a helmet and knee pads - all made of different plastics...some hard and protective, some soft and flexible.

On the following page, design some more, fab scooter gear (made of plastics) that Mo might wear while riding to school or playing in the park.

Think about which parts of the body need protection - for example her head, elbows, wrists, hands, knees, shins and ankles - and take inspiration from the picture above to draw some great gear!

Think about how flexible or hard the protective gear needs to be - how can plastics do the job?

Hint: Velcro straps are soft and polypropylene helmets are hard

Think about weather conditions and the time of day and how this might impact on your design.

Hint: Plastics made in bright colours or with a reflective finish can be seen more clearly

Use this table to help you with your design:

Parts of the body that Mo needs protecting:	What scooter gear is needed?	Properties of plastics that can make Mo's scooter gear work for her: (tick all that apply)					
		strong	hard	flexible	light-weight	coloured	reflective
head							
body							
elbows							
knees							
wrists							

My design of Mo's fab scooter gear:



Designed by.....(your name)

CREATIVE DESIGN ACTIVITY - 2

Super-heroes usually have special powers...maybe they can run extra fast, maybe they can jump extra high or maybe they can throw extra hard.

And guess what? Plastics are the materials that can help them perform these super-powers.

Just like a Paralympian with a running blade which is made from carbon fibre (a type of plastic), plastics can replace a limb and improve performance.

In the case of super-heroes though, this can be taken to extreme - rather than giving everyone a fair chance in the same race, the object is to gain an advantage over your arch enemy. They need to be able to run much faster, jump much higher and throw much further.



This illustration by artist Jake Rowlinson features *Superduper*, a super-hero with prosthetic running blades that enable him to run superfast and jump superhigh.

Now on the following page, design some more plastic prosthetics for Superduper, which will give him even more amazing, super powers.

Hint: Plastics can be very strong, very flexible (bendy/springy) and very light - use your imagination to dream up some extraordinary plastic prosthetics with super powers.

Use this table to help you with your design:

Parts of the body that need reinventing:	Properties of plastics that can make Superduper's special prosthetics work for him: (tick all that apply)					
	strong <i>super strength</i>	flexible <i>extra bendy</i>	stretchy <i>extra extendable</i>	light-weight <i>defies gravity</i>	coloured <i>superhero colours</i>	clear <i>invisible</i>
Forearms						
Legs						

My design of Superduper's prosthetics which give him super powers:



Designed by.....(your name)