

From mountain to sea

SPEED AND SIGNAGE



Speed and signage

Activity Guidance

Guidance Notes	
Activity	Sign meaning and stopping distances.
Description	Brief discussion of meaning of signs relating to their shape and colour. Demonstration to show vehicle stopping distances under different circumstances relating to speed and weather conditions.
Age	Level 2
Equipment	Signage cards (see appendix) Photo cards of different types of roads (see appendix) Measuring wheel or measuring device Cones Large space UK Department for Transport “Know your traffic signs” publication - https://www.gov.uk/government/publications/know-your-traffic-signs
CFE Outcomes	HEALTH & WELLBEING: HWB 2-16a, HWB 2-17a, HWB 2-18a, HWB 2-38a, HWB 2-40a LITERACY & ENGLISH: LIT 2-07a MATHEMATICS & NUMERACY: MNU 2-10c
Timescale	Time: Task 1: 10 mins. Task 2: 10 mins. Task 3: 15 mins. Extension: 15 mins



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Activity Guidance

Introduction

This guide will help you to discuss the road signs that pupils would be likely to see in their home town or village. This guide also aids discussion of the dangers of cars and how difficult it can be for them to stop suddenly in relation to certain speeds.

Aims

To briefly discuss signage meanings.

Discuss where different speed limits might be found.

Look at braking distances of cars in different speed zones within a town or village.

Look at how the weather might affect these distances.

Discuss extra factors that affect braking distances (upper primary only).



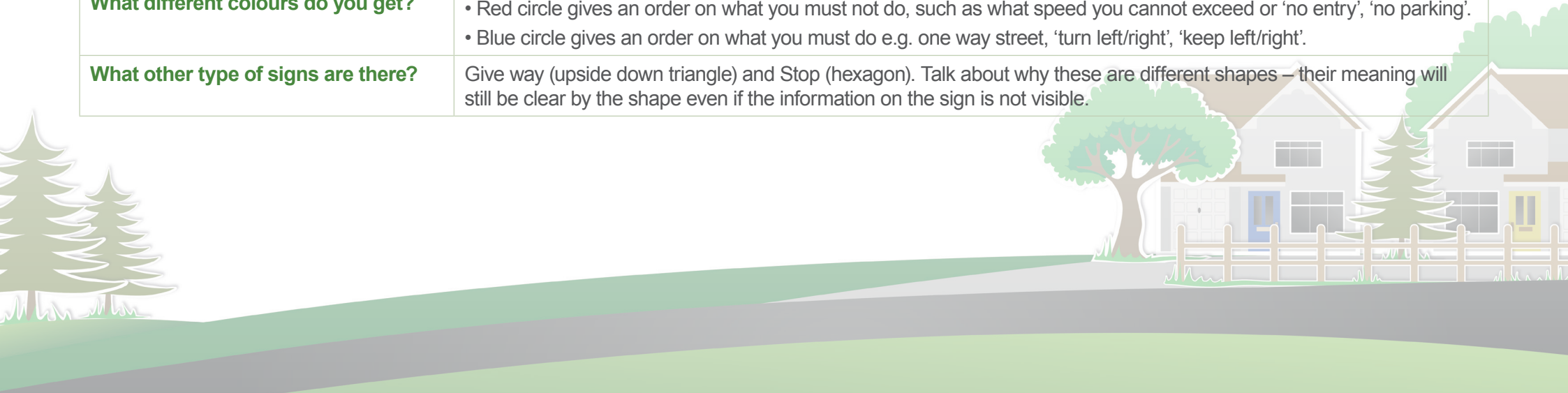
Task 1

Discussions about signs – Classroom based

Discussion based: Signs are there to tell drivers what they should and shouldn't do. Show examples of shapes.

There are lots of different signs for different purposes, encourage pupils to look out for these and discuss their meanings with an adult.

Question	Answer
First of all, what different types of roads do you see when you are out and about?	<ul style="list-style-type: none">• Single carriageway roads – these are roads with one lane going in one direction, one lane coming the opposite direction.• Dual carriageway roads – these are roads with a dividing strip between the traffic in opposite directions and usually two or more lanes in each direction.• Motorways – these are roads with two or more lanes in each direction, often have restrictions on where you can enter and exit them, and pedestrians and pedal cycles are not allowed. <p>You also get roads in areas where people live, through town centres and rural roads in the countryside that can be quite narrow with no centre white lines. If there is no white line on a road in the countryside, it normally means the road is too narrow to mark out with standard road widths.</p> <p>Explain it is important to know the difference, as these matter for understanding road signs and speed limits.</p> <p>Show photo cards of different types of roads.</p>
What does a sign in the shape of a red triangle mean?	Give warnings to drivers (provide examples, such as 'watch out for deer' or 'sharp corner ahead'). Ask for any other suggestions.
Rectangular signs?	Provide information, such as directions or information on parking.
And signs in the shape of circles? What different colours do you get?	<p>Give orders on what you must or must not do.</p> <ul style="list-style-type: none">• Red circle gives an order on what you must not do, such as what speed you cannot exceed or 'no entry', 'no parking'.• Blue circle gives an order on what you must do e.g. one way street, 'turn left/right', 'keep left/right'.
What other type of signs are there?	Give way (upside down triangle) and Stop (hexagon). Talk about why these are different shapes – their meaning will still be clear by the shape even if the information on the sign is not visible.



Task 2

Discuss speed signs

Encourage pupils to look at these signs when out in the car, and ask their driver how fast they are going!

Question	Answer
Show different speed signs. 20mph, 30 mph, 40 mph. What do these signs mean?	You cannot exceed the speed shown on the sign. Remember, it is not a target! It just means you should not go faster than the speed shown on that sign on the road you are on, and sometimes it might not even be safe to drive at the maximum speed limit on all bits of the road you are on.
Show a picture of the national speed limit? Ask: 1) What does this mean? 2) What does national speed limit mean?	1) It means the national speed limit. 2) The national speed limit is the absolute maximum speed limit for roads in the UK where no other specific speed limit applies. This sign means different things to different vehicles and it can vary by different types of road. For cars this means that you cannot exceed 60mph on single carriageway roads or 70mph on dual carriageways or motorways. For large lorries, it means 40mph on single carriageway roads, 50mph on dual carriageways and 60mph on motorways. They do not use '60' or '70' mph signs like they would a 30 or 40 sign because different vehicles are allowed to go at different speeds when they see this sign. It is the responsibility of the vehicle driver to know the speed limit that applies to them, and you learn this in the Highway Code when you do your driving test.
Where would you find these different speed signs?	<ul style="list-style-type: none">• 20 zones – around schools or in some residential areas. Why? Vulnerable Road users. In housing areas.• 30 zones – in villages/ towns. Why? Pavements and street lighting mean it is designed to allow people to be walking about. Roads in villages and towns are not designed for traffic to go fast; they are designed to keep speeds lower. Speeds are lower to keep people safe.• National speed limit. Faster speed limits found on roads outside of towns and villages. These are designed as faster corridors for vehicles and tend not be near houses or schools.



Task 3

Looking at braking distances. Playground activity.

Instructions	
a)	This should be done in the playground (or in a large hall).
b)	After discussing signs talk about braking distances - how far a car would travel after beginning to brake, before coming to a stop.
c)	Support pupils to mark this out in the playground/hall and use cones to show the distances. Seeing the distances on the ground rather than just talking about them is more effective.
d)	Discuss how the weather will affect these braking distances, what would happen on a wet day (it doubles), what about snow and ice (at least doubles again)
e)	(P4-7 only) What else would influence how far it would take to brake? Condition of tyres (e.g. if worn smooth, they will take longer to stop as they might cause the car to skid), weight of vehicle.
f)	What might influence the amount of time it takes for a driver to start braking? The driver's concentration, which can be influenced by tiredness, being distracted e.g. by adjusting the radio, or using a mobile phone (holding a mobile phone while driving is illegal, but using it hands free can also cause distraction) or being under the influence of drugs or alcohol (which is illegal).
g)	Discuss what to do to minimise the risk of not being able to stop in time. Answers include driving without any kind of distraction and not driving when tired; leaving adequate space between you and the vehicle in front; making sure vehicle tyres are in good condition and legal; making sure vehicle is regularly serviced and MOT'd to ensure brakes are in good working condition.



Extension

Optional task for older/high attaining groups - Calculating Stopping Distances

Introduce the following formula: Stopping Distance = Thinking Distance + Braking Distance.

Discuss what might affect driver reaction time:

- Concentration
- Tiredness
- Alcohol or drugs

Include an exercise to demonstrate pupils' reaction time and then calculate how this would contribute to stopping distance:

Here is an example activity, for use on computer/interactive whiteboard-

<http://www.bbc.co.uk/blogs/theoneshow/consumer/2009/01/22/brain-training-how-fast-are-yo.html>

Once you have an average reaction time for a pupil, you can use $\text{DISTANCE} = \text{SPEED} \times \text{TIME}$ with different speed limits to calculate the reaction distance for a pupil volunteer.

Discuss how these compare and what happens to the braking distance.

Possible Additional Task: Ask pupils to do a task, such as reciting multiplication tables, while playing the reaction game. How does that affect their score? Why?

Show average stopping distances at different speeds using interactive animated quiz at following link:

http://www.roadsafetyweek.org.uk/stopping-dist-calc/story_html5.html?_sm_a_u_=iVV5ZZ8v3nssSWr6

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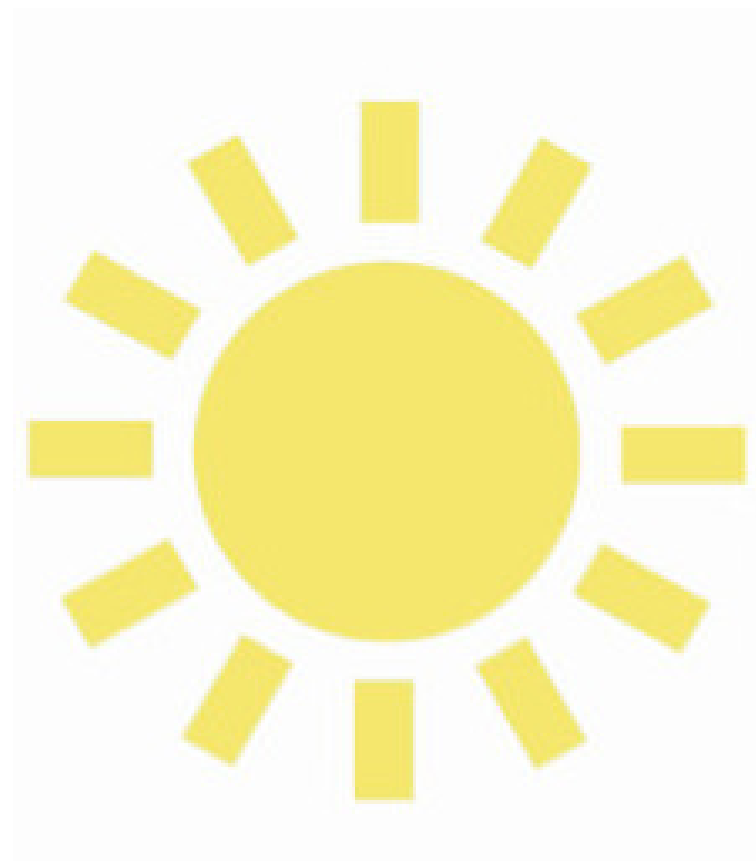
Appendix

Photo cards of different types of roads to explain single carriageway, dual carriageway, motorway, rural roads with no white lines.





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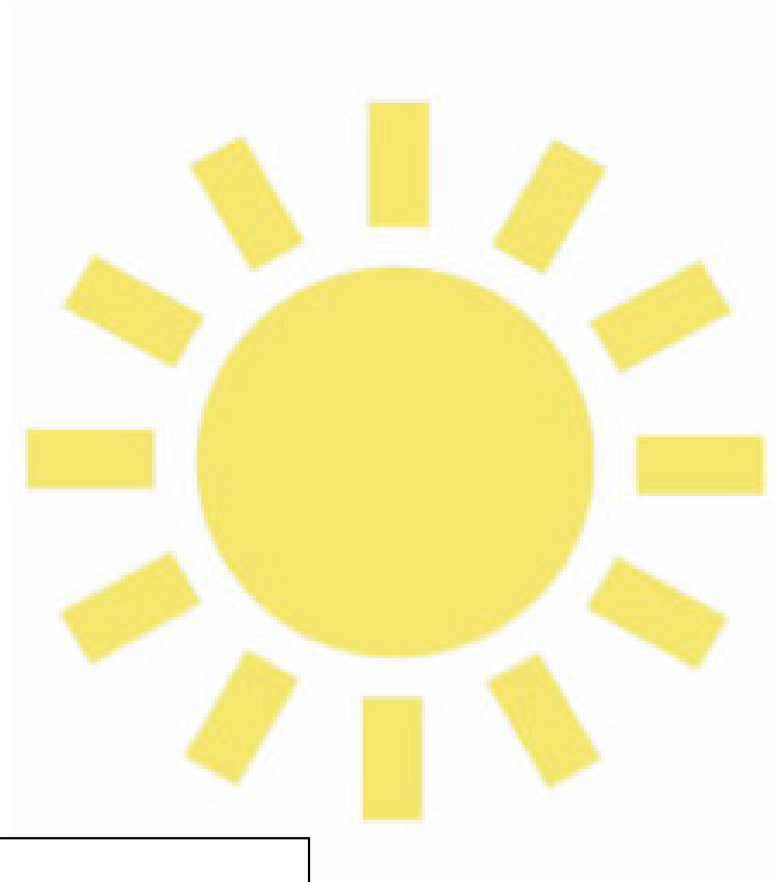


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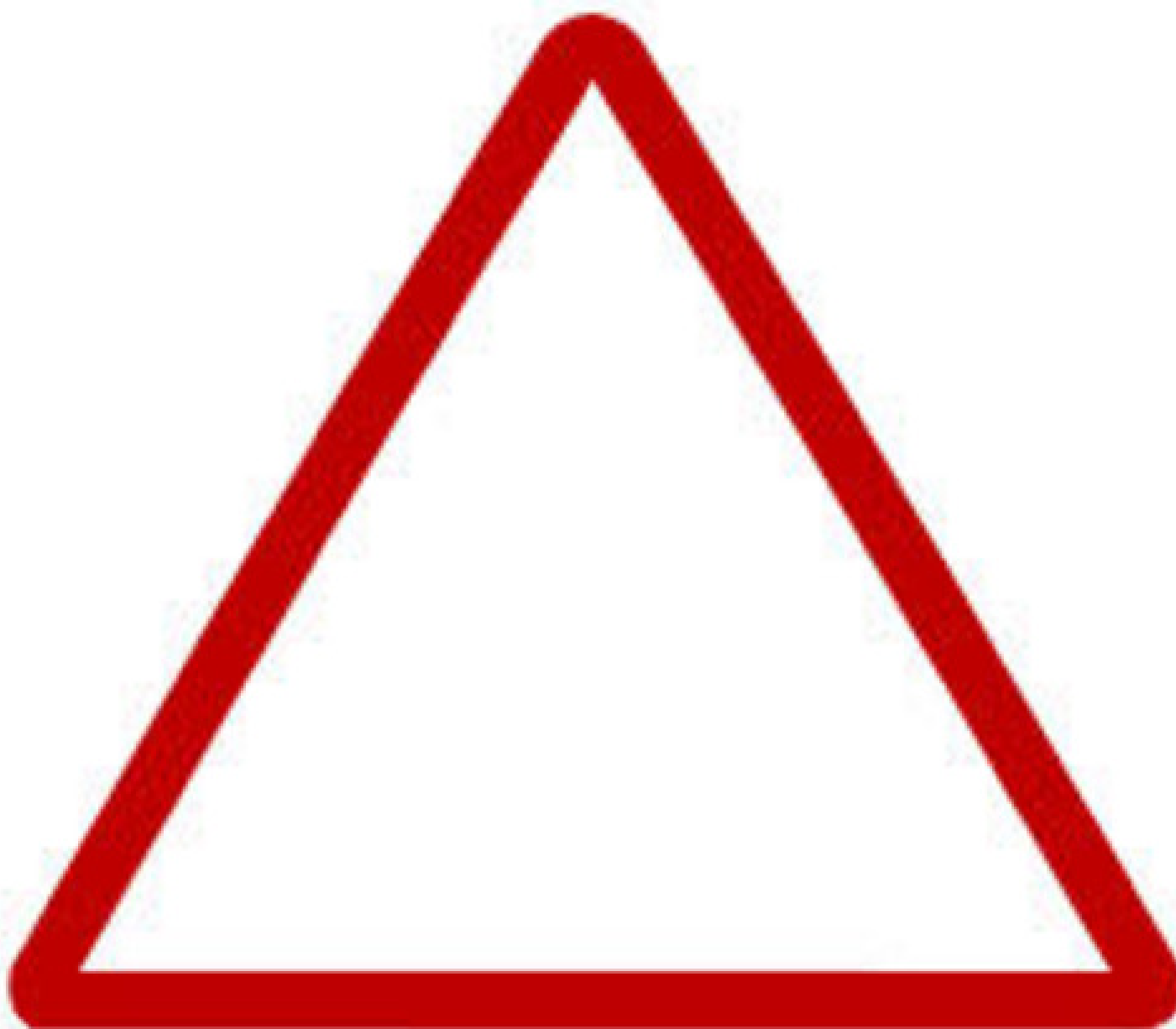


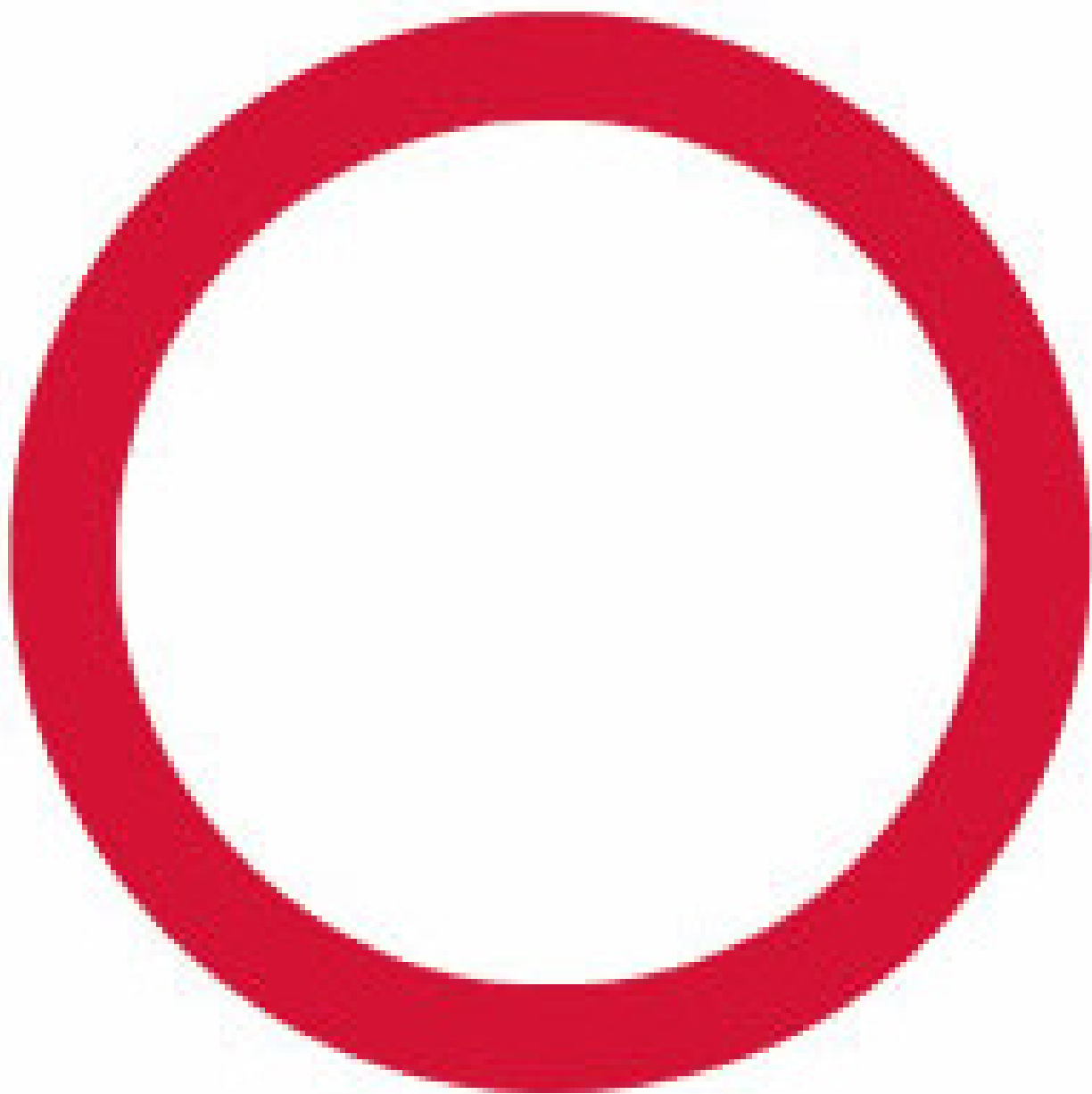












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