

Session 1 Notes

Objectives	To introduce the concept of design thinking & exploring the limitations of making assumptions on creative problem solving.
Overview	The video begins by discussing the mindset of a creative thinker, the role of storytelling in problem solving, and how making assumptions can limit our thinking skills. A case study is explored that relates to a car manufacturer trying to improve its sales of electric cars. The video explains the process of getting to the heart or root cause of the problem that needs to be solved and the way that guiding questions can be formed to provide a clear pathway through the problem. The Reflection Journal can be completed at the end of the session or set as homework.
Resources	<p>The video guides the structure of the session. The teacher can alter the pace according to the needs of their students and the time available.</p> <p>Students will need some paper to write notes for the assumptions video task.</p> <p>The Reflection Journal can be completed at the end of the session or set as an extension or homework. The Optional questions for discussion and/or reflection in this document can be set as prompts for this reflective task.</p> <p>The Creativity Playbook can be used to provide starter or extension activities.</p>
Skills focus	<ul style="list-style-type: none">• Analytical thinking• Critical thinking• Communication
Duration	60 minutes (minimum)

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Suitability	<ul style="list-style-type: none">• Students aged 12-14 (Key Stage 3)• Citizenship lessons• Broad General Education (Scotland)• A Problem-Solving/Thinking Skills co-curricular club• Personal, Social, Health and Economic (PSHE) education thinking skills unit.
Key terminology used in the video.	<p><i>Accessibility</i> - capable of being understood, reached, used, seen.</p> <p><i>Aesthetic</i> – pleasing in appearance.</p> <p><i>Analyse</i> – to study or examine something in detail to discover more about its parts and its importance & significance.</p> <p><i>Assumption</i> – a view that something is true.</p> <p><i>Audacious</i> – show a willingness to take risks.</p> <p><i>Collaboration</i> - the situation of two or more people working together to create or achieve the same thing.</p> <p><i>Desirability</i> – attractive.</p> <p><i>Empathetic</i> – having the ability to imagine how someone else feels.</p> <p><i>Evaluate</i> – to judge or calculate the quality, importance, amount, or value of something.</p> <p><i>Feasibility</i> - the possibility that can be made, done, or achieved, or is reasonable.</p> <p><i>Human-centric</i> – placing the human being(s) at the heart or centre of the issue.</p> <p><i>Job security</i> - If you have job security, your job is likely to be permanent.</p>

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Market share - the number of things that a company sells compared with the number of things of the same type that other companies sell.

National government - the government, or political authority, that controls a nation. In the UK, the national government is made up of the party (or parties in the event of a coalition government) that has gained the majority of vote share in a general election. The UK national government sits in the House of Commons in Parliament, which is in Westminster, London. The Scottish Government, Welsh Government and the Northern Ireland Executive are also examples of national governments and have come into existence because of devolution (the moving of power or responsibility from a main organization to a lower level, or from a central government to a local government) brought about as a result of referendums (a general vote by the electorate on a single political question which has been referred to them for a direct decision).

Prejudices - an unfair and unreasonable opinion or feeling, especially when formed without enough thought or knowledge.

Protagonist - one of the main characters in a story or a play.

Target market - the group of people that a company wants to sell its products or services to.

Unconscious bias - Bias is a prejudice in favour of or against one thing, person, or group compared with another usually in a way that is unfair. Biases may be held by an individual, group, or institution and can have negative or positive consequences. Unconscious biases are social stereotypes about certain groups of people that individuals form often without realising.

Viability - ability to work as intended or to succeed.

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<p>Optional questions for discussion and/or reflection.</p>	<p>Can you think of any other stories or films in which the main character must defeat a 'monster'?</p> <p>Why might it be important to listen to the views of other people when you are trying to creatively solve problems?</p> <p>What would change in your local area, country and in the rest of the world if assumptions and prejudices did not exist?</p> <p>Why do you think that some people are prejudicial towards others?</p> <p>How influential can assumptions be when people are voting in general elections or referendums? Can you think of any examples?</p> <p>Can you think of any examples of prejudice that you have seen or heard/read about in the news?</p> <p>Why could having assumptions be damaging to vulnerable groups of people?</p> <p>Can assumptions be true?</p> <p>The video talks about the idea that the challenges that people face can be unspoken or invisible. Can you develop this idea a little more by thinking of unspoken and invisible challenges that some people face?</p>
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Extension

This session touches upon issues relating to prejudicial attitudes and the consequences of these. Using the discussion/reflection questions above, students are encouraged to consider the impact of stereotyping, prejudice and discrimination on individuals and relationships. Students could also be encouraged to identify stories from newspapers (online or print versions) that reveal prejudice towards a group or groups. The Equality Act 2010 could be explored along with the different forms of discrimination that can be experienced by people (direct, indirect, harassment and victimisation). The concept of diversity could also be discussed in terms of its benefits to local, national and global communities. The limited global diversity in terms of gender, age race, identity, disability seen in some employment sectors would also be an interesting topic to explore with students. This session could therefore be spread out over two or more hours to incorporate discussions of this nature.

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Transcript of Video Session 1

Hello and welcome to this series that will help you to develop your creative thinking and problem-solving skills. These are essential skills for today and for your future.

What you are going to explore during this course is a strategy or approach to creative thinking that is known as design thinking.

Design thinking is a mindset that is characterised by a series of overlapping spaces rather than a series of rigid and orderly steps.

To become an effective design thinker you will need to be driven by curiosity, accept that you do not have all of the answers and be comfortable with that.

Human beings love stories and design thinking provides opportunities for you to tell the story of the challenge or problem that you need to overcome and the solution that you have found. Think of this as you being on a quest.

Think about the stories that you have read or films that you have watched where there is a monster that the protagonist, hero or heroine needs to overcome to survive or succeed. Stories that spring to mind might be Sleeping Beauty where the prince needs to defeat the dragon to save the princess and Harry Potter who must defeat Voldemort.

In some ways, design thinking can be viewed as though we are on a quest to defeat a monster. We have a problem that we need to solve. This problem might be complex and require help from lots of different people along the journey. We need to come up with lots of different solutions – some of these will not work and some might work with a bit of tweaking. The important thing to remember while on this quest is that no one has all of the answers. Humans drive forward your quest – you are motivated and excited to solve a problem to make someone's life easier, safer or improved in many other ways. You will need to be bold, courageous and audacious. You will need to experiment, test your ideas and iterate. When you iterate you are adapting your solution to make improvements.

Design thinking is a collaborative process so you will be able to practise working with and listening to your peers and other people that you might involve. All of this will help you to improve your communication skills and develop in confidence and open mindedness.

Design thinking always begins with a problem. In order to get yourself into the mindset of the design thinker, you must try to free yourself of prejudices or assumptions about people, places and objects. You must not approach design thinking with any expectations – you must open your mind to all possibilities and be prepared to think and see things from a different perspective to your own.

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So let's try a short exercise to help us get into this mindset. In a moment you will see three individuals appear on the screen. Write down the first thing that comes into your mind about them. This could be related to their age, the challenges they may face, their job, their wealth or income, their health, their relationships, gender, race or anything else that comes into your mind.

Okay, so you probably have noted a few impressions about these people. Look at your notes – can you see that these are all assumptions that you have made. We all do this without realising when we meet someone. This is known as unconscious bias. This is normal human behaviour but we can judge people incorrectly and unfairly based on things that we think rather than know about them. How can we know about the challenges that these people face when so many challenges are unspoken or invisible? When we make assumptions about people's success based on the clothes they wear or the car that they drive, are they accurate? When we judge someone by their age are we dismissing what they are able or unable to do or are we assuming that they are only interested in certain things?

The thing is that we can't really know and understand people and their lives by assuming. We need to communicate and find out information before we pass judgement or design solutions to the challenges that we think they will face based on what we assume their lives and experiences to be.

When we are thinking about solving problems we need to be mindful of three aspects:

1. Desirability – is this what people want?
2. Feasibility – is it possible?
3. Viability – is it affordable and does the technology exist to make it work?

In order to answer these questions, we need to be driven by a deep understanding of what the problem is that we are trying to solve. We would identify who has the problem and try our best to see it from their perspective rather than our own.

Let's look at an example of this in action.

Imagine a car manufacturer that has adapted its range to include electric cars but is struggling to meet its sales target.

The manufacturer needs to identify the problem and why it is a problem so that it can solve the problem.

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After conducting research with its target market, the manufacturer identifies the reasons for its low sales:

1. The cost of the new electric model is too high especially when compared to petrol models.
2. Customers in the target market have a poor understanding of the of term economic and environmental impacts of driving electronic cars.
3. Lack of choice of models.
4. Insufficient charging points along busy commuter routes and where they exist, the cars take too long to charge.

Next, the manufacturer will form three teams within its organisation to tackle these issues. Each team will be asked to write a guiding question so that they are clear about what they need to focus on.

Team 1 would frame their question as:

"How might we improve our communication to our target market so that potential customers understand and embrace electric cars as economically viable and aesthetically desirable?"

Team 2 would frame their question as:

"How might we source a cheaper, longer-lasting battery for our models that will result in a reduced manufacturing cost and are more affordable purchase price for our target market?"

Team 3's question would be:

"How might we work with local and national governments to facilitate the installation of more and faster electric car charging points along major road networks?"

The manufacturer now has a clear direction that it can follow to solve the challenges that it is facing so that sales improve.

In the 'defeating the monster' analogy I mentioned earlier, the manufacturer is on a quest to defeat the 'monsters' that are high manufacturing costs, mediocre design, poor communication, scarcity of external resources such as charging points. The teams now have to defeat these monsters so that they can succeed in their quest to improve sales, but if they place the customer at the heart of their problem solving they are going to experience success in terms of customer satisfaction, improved reputation, better relationships with local and national government, increased market share, increased investments, job security and a higher share price.

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This shows that sometimes when you are solving one problem, you are actually solving many, some of which perhaps were not even on your radar.

So how do the teams begin to start solving their problems? The first thing that they would not do is brainstorming or brain dumping their own ideas. The reason for this is because they may be driven by their assumptions of what is causing the problem. They would prioritise communication with their customers and their target market so they can understand what is really going on rather than what they think is going on. They may have an unconscious bias about the target market which could set them off course. A design thinker would never assume that they know and understand the problems of their user or customer.

Imagine that someone on the team has an unconscious bias about the problem and the customer. They might begin with a brainstorming exercise where they note that the reason for low sales is that many people believe electric cars to be a safety hazard because they are silent. While this may have some truth to it, it might not be what is causing low sales. In fact, some of the target market might believe that the low noise was a reason to purchase....the team would never know unless they asked the right questions.

But back to the design thinking teams: following extensive interviewing among other strategies, they understand the context of the problems to be solved. These revolve around communication, economic viability, aesthetic desirability, accessibility and speed.

These problems are now precise and have been derived from human-centric and empathetic data which has been analysed and formulated into a sharp focus. The teams can now divide up the problems and head off along the right path in order to solve them. Skipping this phase of problem solving could have meant that the teams might have pursued a costly solution to the low noise issue that was never really an issue in the first place.