

Session 3 Notes

Objectives	To generate ideas to solve a real world issue using the 'Idea Box'.
Overview	<p>The video invites students to begin the ideation or idea generation process. The concept of the Idea Box is introduced and demonstrated using a case study. Students are then encouraged to create their own Idea Box to generate ideas for their solution to the issue relating to elderly people becoming injured while walking their dogs. They need to achieve a fine balance between feasibility, viability and desirability. The video should be paused at 3:16 so that student can work in groups to work on their idea box. A countdown brings the class back together and readies them for the next phase of the design thinking process which involves prototyping their MVP. Students then sketch their solutions labelling the key features in terms of how they tackle the problem. Models can be made using paper clay and/or construction paper. The Reflection Journal can be completed at the end of the lesson or set as homework.</p>
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>Video lesson</p> <p>Idea Box worksheet</p> <p>Paper Clay</p> <p>Construction paper</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>

	The Creativity Playbook can be used to provide starter or extension activities.
Skills focus	<ul style="list-style-type: none"> • Analytical thinking • Active learning • Critical thinking • Communication • Collaboration • Prototyping • Creativity • Ideation • Reasoning • Problem-solving
Duration	60 minutes (minimum)
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>Constraint</i> - something that controls what you do by keeping you within particular limits.</p> <p><i>Generate</i> – to cause something to exist.</p>

	<p><i>Hygienic</i> – clean, especially in order to prevent disease.</p> <p><i>Strategy</i>– a detailed plan for achieving success in situations such as war, politics, business, industry, or sport, or the skill of planning for such situations.</p> <p><i>Parameters</i> – a set of facts or a fixed limit that establishes or limits how something can or must happen or be done.</p> <p><i>Variation</i> – something that is slightly different from the usual form or arrangement.</p> <p><i>Minimum Viable Product (MVP)</i> - a version of a product with just enough features to be usable by early customers who can then provide feedback for future product development.</p>
<p>Optional questions for discussion and/or reflection.</p>	<p>Creative design solutions often combine two or more existing ideas to create a new idea or solution. Think about how wheels were added to suitcases to help solve the problem of carrying heavy luggage when travelling. Can you identify other idea combinations perhaps in food, fashion, sport, or any other area to show how combining works as a creative problem-solving strategy? (Ideas could include combining chilli with chocolate, the fashion collaboration between Gucci and The North Face, the combination of exercise classes, the Internet and exercise equipment as seen with brands such as Peloton).</p>

Extension

Students could explore the idea of 'combining' as a strategy to solve problems creatively. There are myriad examples of this strategy in action. Students could be tasked with identifying as many examples as they can find. They could be given categories such as food and drink (Ice cream + cookie dough, diluting juice + water, sweet popcorn + sour popcorn), sport (korfbal – a hybrid game of netball and basketball, water polo – a hybrid of swimming and handball), fashion (skort – shorts + skirt) etc. This could be encouraging and confidence-boosting as they will see that not all ideas need to be 100% original and that many brilliant solutions to challenges or new ideas can be forged from those that already exist. They could be presented with a collection of different ideas that they can try to combine to make new ideas. Students could be asked to combine

two/three ideas/objects from the lists below to generate a new idea. For example, a subscription-based sustainable art business or solar powered hairdryer. Additional tasks like this can be found in the Innovation Playbook video.

TEETH

WINE

CRYPTO
CURRENCY

DRONE

SOLAR

MILK

BOOKS

WHEEL
BARROW

LEADER

TEACHER

WATER
PURIFICATION

SOCIAL
MEDIA

HAIR
DRYER

SUNGLASSES

DOCTOR

SUITCASE

BUTTERFLY

YOGA

RUNNING

SELF
PORTRAIT

REMOTE

RETREAT

TOYS

SLIME

TRAINING

MAKE UP

RICE
CAKES

BANK

POCKET
MONEY

APP

BOAT

ART

EVENING
WEAR

HOODIE

HOUSE

BLOG

DOG

SPACE

SCHOOL

HOLIDAYS

ROLLERCOASTER

CBD
OIL

WATER
PROOF

PLANTS

DELIVERY

FURNITURE

NETFLIX

SLEEP

STREAMING

CLOTHING

SUSTAINABLE

RENEWABLE
ENERGY

CAR

SERVICE

ROAD

OCEAN

AQUATIC

BRIDGE

PILLOW

MUSEUM

MAGAZINE

HOSPITAL

MOBILE

CANDLE

COAL

BICYLCE

EXERCISE

PEN

JEWELLERY

REPAIR

HEATING

DATING

DISEASE

BAR

BALLET

WATCH

SUBSCRIPTION

SWEET

THERAPY

PUSHCHAIR

NEWSPAPER

TRAIN

MOUNTAINS

LIFT

BABY

BEACH

SHOES

RESTAURANT

FARM

BOTTLE

OIL

SALTY

CAKE

DESIGN

FRUIT

HAIR

TREES

COMMUNITY

LIBRARY

CASTLE

WOOD

FIRE

PLUG

IRON

THERMOMETER

PHONE

WATER

BATH

Transcript of Video Session 3

Now we can start to generate ideas. Some people believe that they are not creative. Perhaps you believe this about yourself. This is not true.

People are not born as creative thinkers and being creative does not mean being good at arts and crafts. Being creative means being able to think.

You can do that.

Sometimes people can give up too quickly when they don't come up immediately with a brilliant idea. What you need to know about creativity is that if you can use your imagination and come up with lots of ideas, you are already there.

Yes, some of these ideas will not be viable, but imagine if you came up with thirty ideas and just one was viable. That would be enough. In the initial stages of coming up with ideas you should be driven by quantity, not quality. Quite often when people think creatively, their best and most viable ideas come out of thinking without any constraints – almost as if you had a magic wand to create the solution or idea. . And yet sometimes thinking within constraints or boundaries can also help you think more creatively as you try to generate solutions that need to be delivered within a specific timeframe or budget.

So, let's try generating multiple ideas to the problems that you have defined using a strategy known as the 'Idea Box'.

The Idea Box is based on a theory of Dr Fritz Zwicky who was a Swiss astronomer. What Dr Zwicky found was that when you are faced with a problem and are looking for a solution, you should look at the parameters of the challenge first.

These could be time, money, design features, need or function, for example. These are the variables that could feasibly be changed.

So, let's try out this creative problem-solving strategy and see how it works in practice.

Let's say our challenge is to design a hygienic household bin. Our first step is to identify the parameters of the challenge. So, in this case, the parameters could be: the material that the bin is made from, the method of opening the bin and the liner inside the bin.

The next step in this particular challenge is to begin to randomly choose one variation and combine this with two others to create new possibilities of a hygienic design.

Idea Box

MAKE A HOUSEHOLD BIN MORE HYGIENIC

MATERIAL	METHOD	LINER
STAINLESS STEEL	INFRA RED	ANTI-TEAR
PLASTIC	ONE TAP	ANTI-BACTERIAL
WICKER	FOOT PEDAL	PLASTIC BUCKET
BAMBOO FIBRE	PULL OUT OF CUPBOARD	CHARCOAL FILTER

NOTES

Plastic pull-out bin with a charcoal filter liner
Bamboo fibre bin with an infra-red motion sensor with an anti-bacterial liner

From this idea box we could generate ideas such as a plastic pull out bin with a charcoal filter and a bamboo fibre bin with an infra-red motion sensor with an anti-bacterial liner. There are hundreds of possibilities and even if just 10% of the ideas are viable, then you have generated multiple ideas from this simple strategy.

This kind of creative problem-solving technique is also described as 'totality research' as it focuses on looking at all types of solutions.

Dr Zwicky described this approach as a way to establish a complete field of coverage. Meaning that the quest for a viable solution can only be achieved if all possible avenues have been explored.

You will remember that we discussed the idea of design thinking being like a quest, and the idea box will help us on our journey.

The Idea Box can be used for so many problems that require solutions from product design or re-design to services or even personal issues.

Let's try the idea box now to help you generate ideas for solutions to the problems that you have uncovered in relation to the injuries that elderly people are having when they walk their dogs.

Now you have come up with multiple ideas, note the most viable in terms of feasibility, viability and desirability. We need to move on to the next phase of the design process.

The next phase in the design process is to make a prototype or basic model of your most viable solution or your Minimum Viable Product, MVP.

You could mold this out of paper clay or use construction paper or card. You could also draw your solution. You may not be able to decide between two good options. That is okay as you can ask for feedback on both in the next phase. Whichever method you choose, ensure that you are making notes about the solution and identifying its features and how they solve the problem.

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Idea Box

DESIGN A DOG LEAD TO PREVENT PULLING AND SLIPPING

NOTES

Write an idea combination here

Write another idea combination here

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