

Picture Brainstorm

  Individual or Group  10–15 min



- Give each individual a pad of sticky notes and a set of random images.
- Learners should choose an image and think about how they could use it to solve the problem.
- Have them write or draw each idea on a separate note and read their ideas aloud to their group as they post them on a board.
- Allow learners to post and share as many ideas as time allows.

[*See template.](#)

Free Writing or Drawing

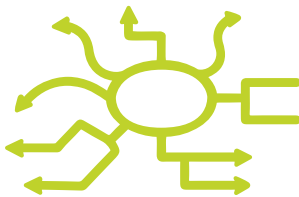
  Individual or Group  10–15 min



- Identify a topic, and have each learner write or draw any ideas that come to mind.
- Then give individuals time to share ideas within their group.
- After all have shared, have the group discuss additional ideas that emerged after listening to one another.

Mindmap

  Individual or Group  15–20 min



- Put the central concept in the middle of a mindmap.
- Have learners record all their ideas related to the concept, clustering ideas and connecting related items visually with lines.

Storytelling

  Individual or Group  15–20 min



Learners can use rapid storytelling to brainstorm the details of several ideas, or focus on one idea at a time.

- Stories can take the form of a storyboard, series of images, roleplay, or narrative text.
- Learners can use prompts to outline.
 - Characters: Who are the stakeholders?
 - Setting: What kind of situations would they be in?
 - Action: What would happen if this idea was used to solve the problem?

Materials Investigation

  Individual or Group  5-10 min



- Have each individual select a different material and share ideas for how it could be used in their group's solution.
- Encourage learners to "think with their hands" by tinkering with and manipulating materials while they come up with ideas.
- When time is up, either bring class together to share their ideas or allow each group to transition into prototyping.

Superhero

  Individual or Group  5-10 min



- Have learners imagine they are superheroes. What superpowers could they use to solve the problem?
- Then ask them to consider how to turn their superpower ideas into innovative solutions.

[*See template.](#)

Mash-Up

  Individual or Group  10-15 min

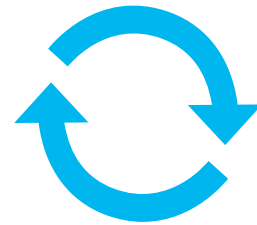


- A mash-up involves combining two random things to develop a unique solution to a problem.
- Distribute or have learners create two lists of fun ideas to mash-up.
- Have them randomly combine ideas from the lists to inspire solutions
 - Lists can be text or images.
 - The items in a mash-up can be ideas from previous brainstorming or things that learners enjoy, such as cats, holidays, or sports.
- Have learners randomly combine (mash-up) ideas from the lists to inspire solutions.

[*See template.](#)

Silent Circuit

 Group  10-15 min



- Tape 2–3 large pieces of paper in different places around the room. Write a different exploratory question at the top of each one.
- Give learners sticky notes. Ask them to walk around the room and silently add responses to each question for as long as time allows.

Brainstorming Solutions: Picture Brainstorm

Name(s):

Date:

Directions: Cut out the images. Shuffle them and choose 1.

How could you use that item to solve your problem? Write down as many ideas as you can!

For example:



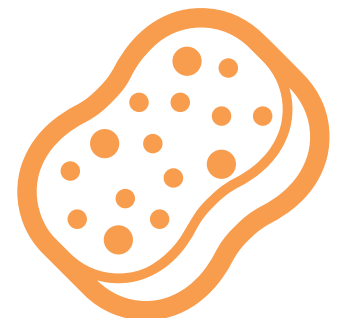
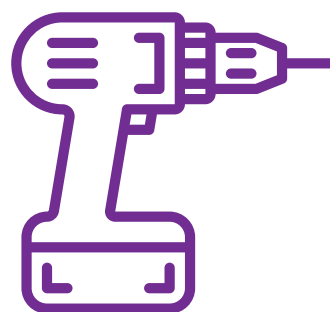
Endangered rhino



Cell phone



Cell phones listen for poachers and send alerts that call for help



Brainstorming Solutions: Superhero

Name(s):

Date:

Take on the role of superhero! This brainstorming exercise will help you come up with some superpower-inspired ideas for how to tackle a problem. Keep in mind that this is just a way to organize your ideas. Feel free to add more ideas than there are boxes!

Step 2: Superpower Ideas

Imagine you could do anything, no limits! What superpower would you use to solve the problem? Record your ideas below.

Example: I'll use my super-stretchy arms to reach the top.

Step 3: Innovative Solutions

Now think about how you can turn these superpower ideas into innovative solutions! What inventions could you design to do something similar?

Example: A retractable ladder that fits in my backpack!



Empty box for recording superpower ideas.

Empty box for recording innovative solutions.

Empty box for recording innovative solutions.

Empty box for recording superpower ideas.

Empty box for recording innovative solutions.

Empty box for recording innovative solutions.

Empty box for recording superpower ideas.

Empty box for recording innovative solutions.

Empty box for recording innovative solutions.

Empty box for recording the problem.

Step 1: Problem

Write down the problem and any other important information.

Example: I can't reach an item on the top shelf.

Step 4: Narrow Your Solutions

Circle or highlight your top 3 ideas.

Brainstorming Solutions: Mash-Up

Name(s):

Date:

Spark innovative ideas by combining two random things. See where your crazy mash-up will take you! Keep in mind that this is just a way to organize your thoughts.

Step 1: Problem

Write down the problem and any other important information.

Example: I keep misplacing my toolbox.

Step 2: Simple Solutions

Write down as many solutions as you can think of. All ideas, even wild and crazy ones, are fine. One-word answers work, too!

Example: Metal detector, Alarm...

Step 3: Random Fun

We started this list of random fun things with some examples of our own. Add some things you like or whatever pops into your mind!



Robots



Biodegradable



Animals



Heroes



Music



Trees

Step 4: Mash-Up!

Draw lines between the ideas in Step 2 and Step 3 to create surprising combinations. Write down several crazy mash-ups and see if they inspire you. How might you design something similar?

Example: Flying metal detector — attach a large magnet to a drone to search the backyard.