



# Children's University Australia



## Winter Challenge Activities

*Each activity in this booklet is worth half an hour in your passport – complete as many as you can and return them to your in school CUA coordinator!*



## Activity 1: Winter Word-Find

M Q I B O T Y X L L X N D C H Q Q C R F  
Q D S Z Y J Z S C F Q L B W E K I Y P C  
M G B L N S R D W J C Q S J A Q S N V R  
L G Q E B F E U K B D V P V T U J X C S  
J A H P J E R U T A R E P M E T P M B N  
Z M U K K E H Z W X T Z J V R K F D G O  
C K M N K O F V X A U M Q S H P Y U L W  
G G L O V E S U K P X W Z N F A M Y X W  
I Z K J Y A O S N B Y G C O M B K Z G H  
C R T S O O L G I Z X B J W I M D D J X  
F K D X Y B S B A X K W X M T E U R W I  
J G Y D J A V T R J K E V A T Z W W S P  
M D F N Z Y D P E N G U I N E I K N H H  
E K J S A N J I X K Y R Z A N N O K A F  
B H L H B G K P L A C M B T S W T G I S  
B I D E F S A N W O R A E D B S M E L K  
G J A B P G N C P O H R J O C J Z F R Z  
Y R P V P M O N A J N U A A V T U V G J  
I F R F X L M U K Y L R R L U C U W D E  
D M F Y D N A C B Y D F X K N W O A N C

BEAR  
COLD  
GLOVES  
HAIL  
HEATER  
HOLIDAYS  
IGLOO  
JACKET  
JULY  
MITTENS  
PENGUIN  
RAIN  
SCARF  
SKATE  
SKI  
SNOW  
SNOWBOARD  
SNOWMAN  
TEMPERATURE  
WINTER



## Activity 2: Winter Recipe

Winter brings a drop in temperature, but it also encourages people to make warm, delicious meals to help heat us up. It might be a pot roast, a hot soup or freshly baked bread – lots of different dishes are very popular in winter.

Think about your favourite winter dish, then do some research (or ask around) to find a recipe to make it. Write down the ingredients and the steps to make the recipe below!



## Activity 3: Weather Analysis

The early signs suggest that 2017 may well be one of our coldest winters on record! In this activity you will record the maximum temperature (you can find this from the news, radio or from a weather app) every day for a week, and answer the questions to learn more about the data set you have created

Date	Temperature

What was the highest temperature of the week (i.e. the MAX)?

What was the lowest temperature of the week (i.e. the MIN)?

What was the RANGE of the temperatures for the week? To find the range, simply subtract the MIN from the MAX

What was the AVERAGE temperature for the week? To find the average, combine the temperatures and divide by seven

Write the seven different temperatures in a number line from smallest to largest

Circle the middle number in your number line to find out what the 'median' temperature was this week. Write that temperature below



## Activity 4: Glitter Icicles!

Icicles are formed when the temperature drops so low that even dripping water begins to freeze! Although it is getting cold across Australia, you may not get the chance to see any icicles this winter, so you'll need to make your own!

Don't forget to take a photo of your creation to show your coordinator!

### Materials

- Aluminum Foil
- String
- Glue
- Sticky tape
- Newspaper
- Glitter

### Instructions

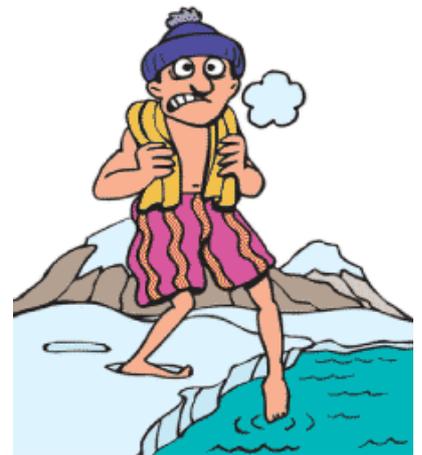
- Cut piece of aluminum foil off the roll. It should be slightly longer than you want your final product to be.
- Cut the bottom corners so you are left with a blunt triangle at the bottom of the aluminum.
- Face the shiny side down, then fold over the top edge of the aluminum a few times.
- Make a loop at the bottom of your string, then tape the loop to one side of the now folded top edge of the foil.
- Gently roll the aluminum foil lengthways starting at the end with the string attached.
- You must now mould the aluminum to get the shape of a icicle. Squeeze the aluminum tightly at the bottom and then more and more gently as you get closer to the top.
- Pour your glitter onto the newspaper
- Use your glue stick to glue most of the icicle. It does not need to be covered.
- Roll the icicle in the glitter you left on the newspaper. Try to pick up as much glitter as you can!
- That's it! You can now hang up your icicle and trick everyone into thinking it is much colder that it is!





## Activity 5: Story Starter!

Write a short story about the image you see on this page! It could be about what happened before or after the image, over even a profile of the person you see. Be as creative as you like and get as close as possible to filling this page!





## Activity 6: Winter Wardrobe

Some people love the change in seasons, as it gives them an opportunity to go out and buy new clothes to suit the cooler temperatures. You have probably noticed a difference in the types of clothes in catalogues at the moment – all of them made to keep you warm.

Imagine you have a budget of **\$250** to create your ideal winter outfit. Have a look through catalogues (either hard copies or online), cut out every item you want to buy and paste it below. Be sure to also show the total amount of money you spend!



## Activity 7: Cold and Flu Comprehension

Read the passage below to learn about the flu, and then answer the questions on the next page.

Influenza (or 'the flu' for short) is a common infection that can affect people of all ages. It was first discovered in 1931. However, the deadliest flu pandemic struck in 1918 where the flu killed over 100 million people around the world. One of the most frustrating things about the flu is that you can get it many times over your life. This is because the virus is constantly mutating (or changing) which means your body does not recognise that it is harmful straight away. One way to think of this is the virus 'disguises' itself different every time it enters your body.

The flu has very similar symptoms to a common cold, but they are usually more extreme and longer lasting. These symptoms include a cough, sore throat, stuffy or runny nose, muscle pain, tiredness and a high fever. People who have the flu might have all of these symptoms, or only some of them.

The flu is so common because it is very good at spreading from one person to another. The virus is very strong, so it can survive on surfaces for a long time. That means that if you sneeze into your hands and then touch an object, the flu virus can live on that object and can then jump onto the hands of the next person to touch it. The flu virus cannot get through human skin, but it can enter your body when you touch your hand to your eyes, mouth, or nose.

As the flu is so common, there are lots of things we must do to protect ourselves. Regularly washing your hands with soap is a great start, but you can also wash your hands with an alcohol based sanitiser which is often more effective at killing the virus. You can use tissues when you blow your nose or sneeze, so long as you throw it away straight afterwards. You can ask your doctor for a vaccination which teach your immune system how to protect you from the flu virus. Finally, when you do have the virus, you can stay home from school and work so the virus doesn't spread to others!



Question 1 – How many years after the deadliest flu pandemic was the virus properly discovered?

Question 2 – How many different symptoms can the flu present at once? Do you need to have all of them to have the flu?

Questions 3 – Why should you stay at home when you have the flu?

Question 4 – Why can you catch the flu every year?

Question 5 – Can the flu live on surfaces outside of the body?

Question 6 – Why is it better to use a sanitiser than normal hand soap to stop the spread of the flu?

Question 7 – Why do you think you should use tissues rather than a handkerchief when your sneeze?



## Activity 8: Winter Window Decorations

Stained glass windows are those with a coloured picture or pattern within them. They are an art form over 1000 years old and are most commonly found in large, significant buildings. By following the instructions below, you will be able to create a winter-themed stained glass replica for your own window!

### Materials

- 2 sheets of A4 paper/cardboard (ideally the same colour, but it is your choice)
- 2 sheets of clear contact also cut larger than A4 size. We suggest 24cm x 33cm.
- Pre-cut coloured tissue/crate paper or cellophane. Coloured paper should be cut into small shapes and there should be enough to cover an A4 page.

### Instructions

- Take one of the A4 sheets of paper and cut a 2cm border around the edge.
- Take your second sheet of A4 and cut out a paper snowflake (or another winter image).
- Place the first piece of contact on a table/desk, with the sticky side facing up.
- Carefully place the border you cut out earlier onto the contact.
- Take the paper snowflake (or other image) that you prepared, and stick somewhere within the frame you just created.
- Using one coloured shape at a time, fill the space within the frame. The shapes can overlap the image if you wish, this will not be visible from the front.
- Once you have covered the space within the frame with coloured shapes, take your second piece of clear contact and place it sticky side down around the border.
- Trim the excess clear contact from around the edges of your frame.
- Flip the window over to reveal your finished masterpiece!





## Activity 9: Temperature Trivia

Discussion about the weather is common place during winter – we all feel the cold and love to complain about it! Here in Australia we discuss temperatures using degrees Celsius, but that is not the only unit used to measure temperature. There is also degrees Fahrenheit and Kelvin. Use your best research skills to find the answers to the questions below.

What is the freezing point of water in the following units?

- Degrees Celsius
- Degrees Fahrenheit
- Kelvin

What is the boiling point of water in the following units?

- Kelvin
- Degrees Celsius

Who invented 'Degrees Fahrenheit' and what year did this occur?

Which three countries in the world do not use Degrees Celsius?

What is the abbreviation for the following units?

- Degrees Fahrenheit
- Degrees Celsius
- Kelvin

Which is hotter: -10 Degrees Celsius or 203 Kelvin?



## Activity 10: Pascal's Triangle

Pascal's Triangle is one of the most interesting number patterns in mathematics. Research how the numbers in Pascal's Triangle work, and fill in the empty shapes below:

