

INTERDISCIPLINARY SUSTAINABILITY
PRIMARY TEACHERS PACK

CLIMATE CHANGE CEILIDH

EXPLORING THE WATER CYCLE AND CLIMATE CHANGE THROUGH
MUSIC, DANCE & OUTDOOR LEARNING

LEARNING INTENTIONS:

Pupils are learning to:

1. Represent the stages of the water cycle through sounds and movement models
2. Better understanding changes in the water cycle linked to climate change by adapting these creative models
3. Link interdisciplinary science and creativity in the context of global challenges

RESOURCES

- Hall/playground or outdoors!
- Recycled/natural materials for DIY instruments - from stones, tubes, tubs, bottles, water, elastic bands, dried rice, jars .
- Presentation or print out of the water cycle (available online)

INTRODUCTION

10 mins

Introduce the water cycle and climate change. Explain that it has four stages (Evaporation, Condensation, Precipitation, and Collection) and that we will be exploring how this is affected by the rise in global temperatures creatively through music and dance. Make links to local changes - especially if doing outdoors!

Scotland's average temperature has risen 1.3°C degrees - find out your local changes to temperature & rainfall for e.g. on: environment.gov.scot

SOUNDSCAPES

20 mins

Our first activity is to make a **water cycle soundscape** to represent these four stages symbolically. Breaking the class into groups, use recycled materials and materials that you find outside to create your soundscape and perform them together. You may want to keep each stage to 16 beats or counts. Once you have made the normal water cycle soundscape, after discussing how it may change, adapt it to make a **climate change soundscape**. There are both ideas for materials for sounds and how to change it for climate change on the next page.

How are all sounds made? You can discuss the physics of vibrations in more details with the different instruments. Check out our free physics of music resource on: scienceceilidh.com/resources

WATER CYCLE DANCE

20 mins

The second activity explores the same four steps physically to make a **water cycle dance**. Breaking the class into groups again, ask learners to think about how to embody each step - how could you represent water being evaporated into the atmosphere? Keep each stage to 16 beats and you may find it easier to start off with each dancer with a partner standing opposite each other in groups of 4 couples, and there are dance ideas overleaf and a more complete guide on our website.

How could you change rhythm, the speed (tempo) and volume and how softly/hard you play (dynamics) to change the soundscapes (and even the dance!) in both normal and climate change versions?

Are there other props that could be used to support the dance and movements? You could extend this to even more creative & interdisciplinary by making signs, (recycled) costumes & crafts to support the message. Can you even perform it at an assembly or family event?

PLENARY

5 mins

Once you have made the normal water cycle, discuss how this may change with climate change. You could perform the dance and couple this with the soundscape together if each of the stages is kept to the same length of time.

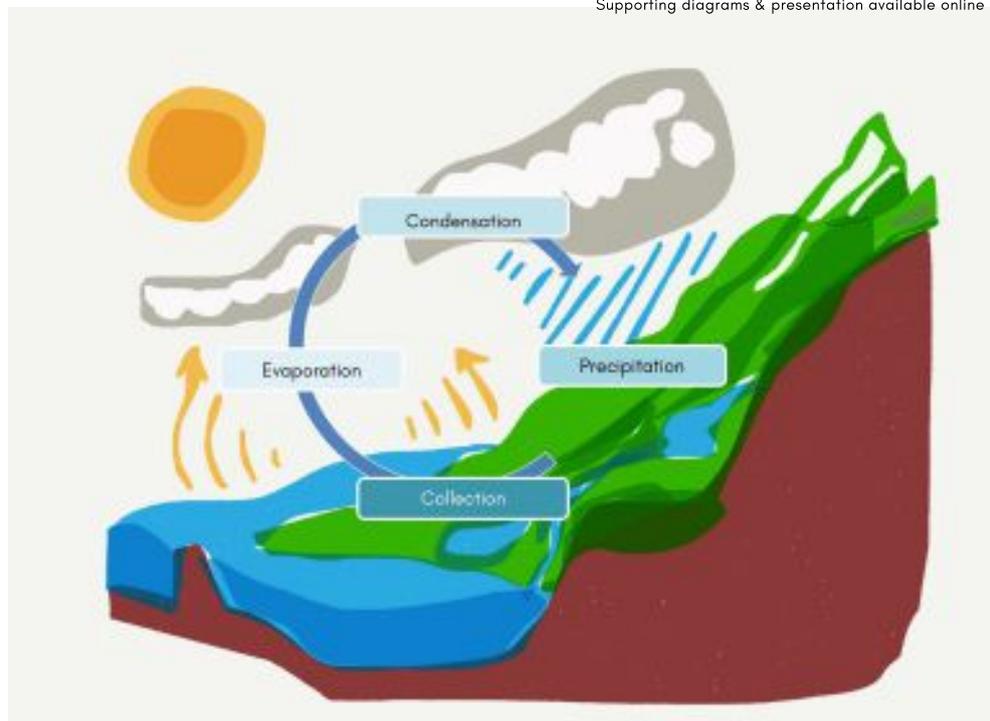
Reflect on the activities from today and discuss on the importance of both science and creative skills and interdisciplinary for combatting global challenges like climate change.

How do these models help us understand climate change? Where are they not so helpful? All models in science have strengths & weaknesses - do critically discuss where the dance and music model work well & don't work so well!

WATER CYCLE

The water cycle explains how water moves as a liquid, gas and sometimes solid between bodies of water, atmosphere and land.

Our activities encourage learners to be as creative as possible & to come up with their own ideas but to get you started, we have few suggestions for how the water cycle can be represented by movements and by sounds, along with how each stage can be affected (and then represented) by climate change.



WATER CYCLE

DANCE

SOUND

CLIMATE CHANGE

Evaporation – Water evaporates because of the heat of the sun

Stand in two lines. Top pair runs down through middle of rows to bottom.

Percussive, hitting stones, stamping feet on ground. crumpling paper

There can be more evaporation because of higher temperatures
Dance: Have 2 couples run up through the middle rather than 1
Sound: Increase the speed and intensity of sounds

Condensation – Water vapour condenses to form clouds in the atmosphere

Lines facing each other, do 'Mexican Wave'.

Windy, blowing over open bottles & tins, whistling through grass blades

There can be longer process of condensation as warmer air can hold more water vapour
Dance: Slow down the mexican wave, make this step longer
Sound: Increase the duration

Precipitation – Water eventually is released as rain or snow back to the ground

Bottom pair runs back to top as "rain", along outside of the two rows

Shaking a rainstick, dropping pebbles into a jar of water, big card sheet for thunder

There can be more intense precipitation in areas because of more evaporated water (& in some areas, there can be drought too)
Dance: More couples run down
Sound: Make longer & louder

Collection – Water collects into lakes, rivers, oceans and other bodies of water

Pairs clap hands with each other or spins their partner

Pouring water from one container into another, shaking with water, shells

There can be flooding because of increased rain & more roads/fewer trees) as water isn't absorbed
Dance: Couples might spin faster!
Sound: Bigger pouring of water, increased intensity



FURTHER LINKS

Further detailed **guides on dance & music creation**
www.scienceceilidh.com/resources

Climate change impacting the water cycle

www.climatechangeimpactingwatercycle.org/blog/climate-change-impacting-water-cycle

Resources on how climate change affects Scotland:

www.adaptationscotland.org/why-adapt/impacts-scotland and <https://2050.scot/blogs/>

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Science Ceilidh is an award-winning education organisation exploring science, traditional arts, creativity and health & wellbeing across Scotland. Our school programme focuses on interdisciplinary learning, raising science and cultural capital, linking schools with research and breaking STEM stereotypes.

FREELY ACCESSIBLE

SCIENCECEILIDH.COM/CLIMATECHANGE

