

ENVIRONMENTAL LEARNING CARDS



SUSTAIN & CONSERVE

FILTERING WATER SC14



ACTIVITY

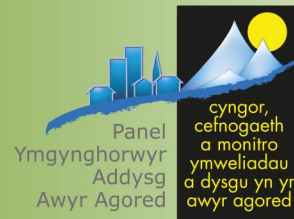
Objective and outcomes:

- To construct a water filter
- To discover how impurities are carried in water
- To stimulate discussion about 'clean water' and access to this

Outline:

- Divide into small groups and ask them to make a cup of water as dirty as possible, add blackcurrant cordial as a 'dye'
- Create a filter by layering coarse and fine gravel followed by sand in a clear plastic bottle turned upside down with the bottom cut off, and tape some open weave cloth over the snout
- Gently pour the dirty water into the filter, and allow water to seep into a clean container held underneath, see overleaf
- Discuss what has been observed
- Young people create their own filters in small groups and test what happens if they put coloured water and/or solutions of sugar or salt through the filter
- Discuss findings

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LEADER'S NOTES

Preparation

- Assemble materials for building filters
- Consider devising a simple 'opacity test' for the filtered water sample using a lamp/torch and a light meter – or maybe the children can devise one....

Resources

- Plastic bottles, gravel, sand, muslin cloth, water container, water
- Water dye (blackcurrent cordial), salt, sugar
- Measuring cylinders
- Conductivity meters could be useful

References

www.wateraid.org/uk/learn_zone/default.asp

DIFFERENTIATION & PROGRESSION

- Construct a still to remove dissolved contents
- Measure water volume before pouring and when collected. Has it all come through?
- Record the time taken from pouring water into filter to last drip (percolation rate).
- Compare different filter contents e.g. coarse sand, fine sand, loose soil, compacted soil, 'compost' from grow-bag. What accounts for the different rates?
- Link to a discussion of infiltration rates (using a short length of plastic drain pipe, time how quickly water poured into it soaks into soil. Compare at different sites).
- Discuss the problems of desert soils (people and plants/animals) and of waterlogged or frozen soils, relationship with agriculture, food production, settlement etc.
- Discuss issues of water shortage and water conservation and/or water cleanliness in both the developed and developing world
- Link to Water Consumption card SC13

REVIEW & EVALUATION

Topics for discussion:

- The water looks cleaner, but is it fit to drink?
- Why didn't the filter remove colour/salt/sugar?
- Would the filter remove water-borne diseases/parasites?