Glitter germs

Why do this?

This activity models how micro-organisms can be transferred through surface contact. It could be used to support the teaching of how germs can be spread from one person to another. It demonstrates how hand washing reduces surface contamination and helps prevent infection.

Curriculum links: Ourselves, health and hygiene, microbes, famous scientists

Suitability

Years 1 - 6

Practical details

This activity has been prepared using CLEAPSS guidance. If in doubt, or for further information, contact CLEAPSS.

Safety

- Children may be allergic to ingredients in the hand lotion, baby oil could be used instead
- Children should not put their fingers in their mouths, eat the bread and butter or ingest the glitter

Equipment per group/class

- Glitter
- Hand lotion
- Newspaper /tray (to catch glitter)
- Access to soap and warm water
- Paper towels / tissue

Notes

- In this practical, germs are represented by glitter. Depending on the age/understanding of the children, it may be necessary to emphasise that the glitter itself is not actual germs and does not cause sickness.
- Teachers may wish to use glitter paint as an alternative to hand lotion and glitter.

Procedure

1. Choose a volunteer. Represent the sweat on our hands by pouring a small amount of hand lotion on their palms. Have them spread it over their palms, but not rub it in.
2. Above some newspaper, or a tray, sprinkle glitter over the volunteer's palms.
3. Proceed by either:
   a) Having the class carryout another activity which requires the children to move around the room, and, after that, survey the classroom and see how the glitter has spread. Explain that the glitter represents germs from a 'pretend' cold that the volunteer has and that touching the 'contaminated' (glittered) areas could lead to catching the same cold.
   b) Put hand lotion (sweat) on the palms of two other children, ask the first child to shake hands with another and observe the transfer of glitter. Ask the 2nd child to repeat this with a 3rd child. This can

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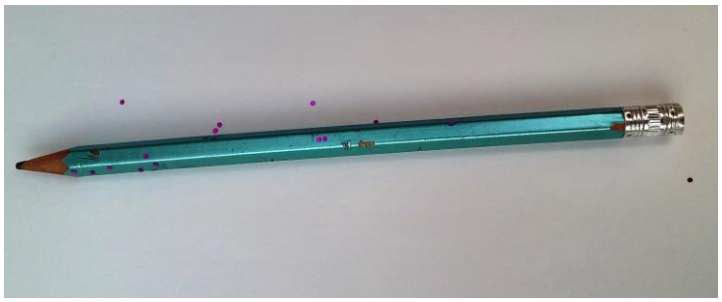
be used to demonstrate how germs from the 1st child can reach the 3rd with no direct contact between them.

c) Working in groups, give each group a small amount of a single, **different**, coloured glitter. Each child, in the group, puts hand lotion on their palms. Sprinkle glitter on one child's hands, they then turn to the next child and shake hands, this child then turns to the next and so on…… until all the children in the group have shaken hands with the person next to them. Carry out another activity, and then survey the room for glitter, noting where the different colours of glitter can be found. The different colours of glitter represent the different types of germs that can be found in an environment and the patterns of abundance shows how germs can be found in clusters.

4. Discuss how to remove the glitter. Choose some volunteers with similar amounts of glitter on their hands to trial different methods: rubbing their hands together, wiping their hands with a dry paper towel, rinsing them under cold water and washing hands with soap and water.
5. Have all the children wash their hands with soap and water.

Expected observations and results



The glitter will be seen on a range of surfaces in the room and on other children and adults, simulating how easily germs can spread. Washing hands with soap and water is the most effective way of removing the glitter, as well as germs.

Possible further activities

- Discuss the spread of germs and the ways in which they can be reduced eg hand washing with soap and water, using a tissue, wiping surfaces with a detergent.
- Once the children have glitter on their hands they can be given a slice of bread to butter. The glitter will end up on the bread illustrating how germs from unwashed hands can get onto food and make people ill.
- If you have carried out procedure 3c. Choose one colour of glitter and map its incidence on a plan of the room. Discuss where the highest concentration of glitter (germs) is. This should correlate with the position of the first infected child and group. How far did the glitter spread from 'patient zero'? How did the spread occur (ie what did the child do)? Explore the story of John Snow and his work on mapping cases of cholera in London, linking the deaths to the contaminated Broad Street Pump.

  Use specially manufactured gel or lotion (sometimes called *GlitterBug* gel, available from reputable school science suppliers) to check how effective the children's hand washing is. Children apply a small amount of gel to hands and rub it in. They wash their hands as normal and then place them under a low-power UV torch (also available from reputable school science suppliers). In normal light the gel/lotion is invisible to the human eye, however, under UV light, the gel will glow. Any remaining gel/lotion where children have not washed their hands adequately glows under the UV light.

Safety with UV light sources

- A responsible adult must always supervise the UV light source.
- Do not allow UV light from a hand-held torch to be shone into children's faces or eyes.
- Keep exposure to any UV source low – no more than 1 minute on hands.

For further guidance refer to CLEAPSS website or phone CLEAPSS.

Background notes

Germs (bacteria, viruses and fungi) are tiny living things (micro-organisms/microbes) that can cause disease. Bacteria can cause infections such as tonsillitis but not all bacteria are bad. Some bacteria are good for our bodies for example; the bacteria living in our intestines help us digest nutrients in the food we eat.

Most viruses cannot survive very long if they're not inside a living thing (a host). When viruses get inside people's bodies, they can multiply and make people sick. Viruses cause colds, chickenpox, measles, flu, and many other diseases. Some viruses can survive for a short time on surfaces like a door handle or a table.

Effective handwashing helps stop the spread of germs. It is important to wash your hands: when your hands are dirty, before eating or touching/preparing food, after going to the toilet, after blowing your nose or coughing, after touching pets or other animals, after playing outside, before and after visiting a sick relative or friend.

If you wish to show children examples of good hand washing techniques use a reputable website such as the NHS. Alcohol gel or foams may be used in some contexts but may not be as effective at killing germs as hand washing with soap and water.

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