Designing and making with textiles

Testing for absorbency and stain resistance

When you are designing, you need to be able to select the best fabric for the job.

It may need to be able to soak up moisture – to be absorbent. Clothing for a disco or sport makes the wearer feel more comfortable if it absorbs some of the sweat.

Other fabrics need to be non-absorbent. These do not soak up water and so dry more easily. Luggage and tents need to be non-absorbent.

If fabrics are absorbent, they will usually take stains and dyes more easily, though this is not always true.

Your tests will help you to see which fabrics are absorbent and which are not, and so which will stain easily and which will not.

Student's Book:
Testing fabrics page 119

What are textiles like? page 118

Time available:
60 minutes

You will learn:
How to test the absorbency and stain resistance of fabrics.

You will need:
- Your workbook
- Pencil
- Five different fabrics – each cut into four squares approximately 50 mm x 50 mm: thin, thick, woven, knitted, natural, synthetic, sold as stain resistant, etc. They should be fabrics that you could use in your design work.
- Scissors
- Water dropper
- Beaker of water containing a few drops of ink
- Non-porous surface (like plastic or laminate or china that will not absorb water)
- Bowl and hot water
- Hand-washing detergent
- ‘Fabric investigations results table’ (TRT16)
- Glue stick

The following stains:
- Ordinary strength tea with no milk
- Fruit juice that stains (such as orange or blackcurrant)
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Part 1 – Testing for absorbency

What to do

Test the first set of five fabrics.

1. Place the fabrics onto the non-porous surface.
2. Place four drops of the coloured water onto one end of each piece of fabric.
3. Notice which fabric the water soaks into most quickly.
4. Then leave the fabrics for 3 minutes.

5. Order the fabrics according to the amount of water they have absorbed. To do this, ask yourself:
   - Which fabric has allowed the coloured water to soak in and spread over the largest area?
   - Which fabric has the smallest wet patch?
   Make a note of the order.

Test the second set of five fabrics.

6. Stitch the five samples loosely together so that they can be hung up.
7. Drip droplets of coloured water onto each sample.
8. Count the droplets of water each sample will hold before it starts to drip. Make a note of the order.

What to write

- Give each fabric a crosses score describing how effective it is at absorbing water?
- Write the scores in your results table.
- Glue a small piece of each fabric you tested onto your results sheet (if you haven’t already done this).
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Part 2 – Testing for staining

What to do

Test the third set of squares with tea and the fourth set with fruit juice.

1. Place the samples on the non-porous surface.
2. Place two drops of stain on each sample.
3. Iron the samples dry.
4. Order the samples according to the amount they have stained. To do this, ask yourself:
   ◆ Which sample has the worst stains?
   ◆ Do some fabrics stain more with tea than with fruit juice?

Make a note of the order.

5. Wash each sample using the hand-washing detergent according to the instructions for that type of fabric.
6. Iron the samples dry
7. Order the samples according to the amount they have stained. To do this, ask yourself:
   ◆ Which sample has the worst stains?
   ◆ Is the order the same as before?
   ◆ Have the stains washed out of some samples a bit?
   ◆ Does the tea wash out more easily than the fruit juice?

What to write

◆ Give each fabric a crosses score describing how effective it is at resisting staining.
◆ Write the scores in your results table.

Part 3 – Drawing conclusions

What to write

◆ Which fabrics gave the best results for absorbency? Can you explain why?
◆ Which fabrics gave the best results for resisting staining? Can you explain why?
◆ Use your results and experience to decide which fabrics would be suitable for:
   (a) a disco shirt;
   (b) seat coverings in the disco;
   (c) protective clothing for working on the car.

Homework suggestion

Write up how you carried out these investigations.