THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

STAGE 2 · DESIGN AND TECHNOLOGY · DESIGN AND MAKE

Design and make

Decisions to learn, things to make, and the questions to ask of the thing afterwards.

WHAT IS INSIDE

- What a design criterion is
- Draw it, then make a mock up
- Cutting, joining, finishing
- Choosing materials and components
- Build structures that hold
- Mechanisms: things that move
- Explore and evaluate what already exists
- Making a mechanism out of card
- Task 1: Write the criteria first
- Task 2: Build the rough one
- Task 3: Make the real one
- Take apart something that already exists
- Look at what you made

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No answers at the back. The work is the answer.

Written for a parent teaching at home. No training assumed, and nothing else to buy.

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Choosing materials and components

Read this, then use it on the task pages.



CHOOSING MATERIALS AND COMPONENTS

A material is what a thing is made of. A component is a part you did not make, like a split pin, a button or a wheel.

Construction materials hold a shape: card, wood, plastic, wire. Textiles are cloth, they go round things and they bend, and they are joined by sewing rather than glue. Ingredients are what you make food from, and food is a material too, with the awkward property that it goes off.

Choose by what the material has to do. Card is stiff and cheap and hates water. Cloth is strong when pulled and useless when pushed. Hold each one and bend it before you choose it.

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Making a mechanism out of card

Read this, then use it on the task pages.



MAKING A MECHANISM OUT OF CARD

Each of the four mechanisms can be built in card in a few minutes, and building one teaches more than naming it.

A lever: a strip of card with a split pin through it, pinned to a second piece. Move the pin along the strip and the same push gives a different movement.

A slider: cut a slot in a sheet, push a tab of card through it, and glue a stop on the back so it cannot come out.

A wheel and axle: a straw glued across the back, a skewer through the straw, a card circle on each end. The straw is what makes it turn freely, and leaving it out is why most card vehicles do not roll.

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Task 1: Write the criteria first

TASK 1

Write the criteria first



Choose something small to make for one person you know: a card holder, a bag for a toy, a stand for a book. Write down who it is for and three things it has to do. Then draw it.

WRITE IT HERE

1 _____

2 _____

3 _____

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SAMPLE PAGES

You have read a few pages. The pack is longer.

What you are holding is a short sample, taken from different parts of the pack so that you can see how a week is planned and what a child is actually asked to do, before you decide.

The complete pack, and the rest of the academic materials, are on our website: schemes of work for a parent teaching at home, and practice packs for the skills children get stuck on.

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Members of the homeschool community do not buy these. If you have joined the community, the pack for the term you are working on is given to you at no cost.

Our Islamic Education classes are free. These packs are part of what pays the teachers who teach them.