THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

STAGE 1 · 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
- Testing paper three ways
- 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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Mechanisms: things that move

Read this, then use it on the task pages.



MECHANISMS: THINGS THAT MOVE

A mechanism is a part that moves in a way you planned. Four of them do most of the work in the things you own.

A lever turns a small movement at one end into a bigger one at the other, and it pivots at a point. A slider moves in a straight line inside a slot. A wheel turns on an axle, and the axle is the rod it turns on. A hinge lets one part swing while the rest stays still.

Find each of the four somewhere in your house before you use any of them in your own work. Scissors are two levers. A drawer is a slider. A door is a hinge.

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Testing paper three ways

Read this, then use it on the task pages.



TESTING PAPER THREE WAYS

You can learn most of what structures do with one sheet of paper and a pile of books.

Flat: it holds nothing. Folded into a concertina of narrow folds: it holds a surprising amount, because every fold is a little beam. Rolled into a tube: it holds more still.

Do all three and write down how many books each one held before it gave way. The sheet was identical every time, so whatever you measured came from the shape alone.

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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.