TIME FOR KIDS

Big Digs: Construction Site



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A Visit to a Construction Site

Put on your hard hat! We are going to visit a construction site. The construction crew is getting ready to build a house. But the planning began long before they arrived.

The Architect



The process begins with an **architect**. This is a person who designs houses. Architects also design other structures such as skyscrapers and bridges. Architects do more than plan what a house looks like. They want the houses they design to be safe to live in. And they want them to be strong enough to last a very long time.

Shape Up!

Most architects take art and design classes. But they also must know **geometry**. Take a good look around your house. There are shapes everywhere—rectangular walls, square cabinets with circular knobs, and a triangular roof. Some windows may even be shaped like hexagons!

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The architect meets with the clients to find out what kind of house they want. How many bedrooms do they need? How many bathrooms? Do they want a big kitchen? How about an attic? Or a pool in the backyard? There are dozens—sometimes hundreds—of decisions to make! Many decisions depend on how many people will be living in the house.

Decisions also depend on the client's **budget**. That is how much money they want to spend.





▼ Construction workers review a blueprint.

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Keeping Costs Down

Most "extras" that people want in their houses add to the cost of building it. For instance, if the client wants an extra bathroom, it means more plumbing will be needed. It also means one more toilet, sink, and shower. The builder adds up all the extra costs so the client will know how much money the house will cost before the building starts.

A Builder's Budget

Feature	Estimated Cost	Quantity	Total Cost
Bedroom 10' x 8'	$2,500	3	$7,500
Kitchen 15' x 20'	$5,000	1	$5,000
Living Room 10' x 15'	$4,000	1	$4,000
Bathroom 8' x 5'	$2,500	2	$5,000
Half Bathroom 8' x 4' (no shower or tub)	$1,800	1	$1,800
TOTAL			**$23,300**



An architect creates a blueprint.

The architect prepares a detailed drawing. This is called a **blueprint**. It shows what the house will look like on the outside and on the inside. It shows everything from the **beams** that hold up the house to how the plumbing will work. Blueprints show measurements for each part of the house. Every wall, door, window, and closet has an exact measurement. One mistake can cause big problems for the builders.

Homes Around the World

Houses come in all shapes and sizes. Different materials are used to build homes in different parts of the world. In Africa, many people live in mud huts. In Mongolia, sheep herders live in *yurts*, or portable folding homes.



a yurt



a mud hut

Why Is a Blueprint Blue?

Blueprints, or building plans, were invented in the 1800s. Plans were drawn on tracing paper. The drawing was placed over paper treated with chemicals. Then it was set under a bright light in a developing solution. The result was blue paper with white lines showing the original plans. No ink was used, so the design could not be smudged or faded. Most architects now create plans on computers. But the term *blueprint* is still used to refer to any detailed plan.

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