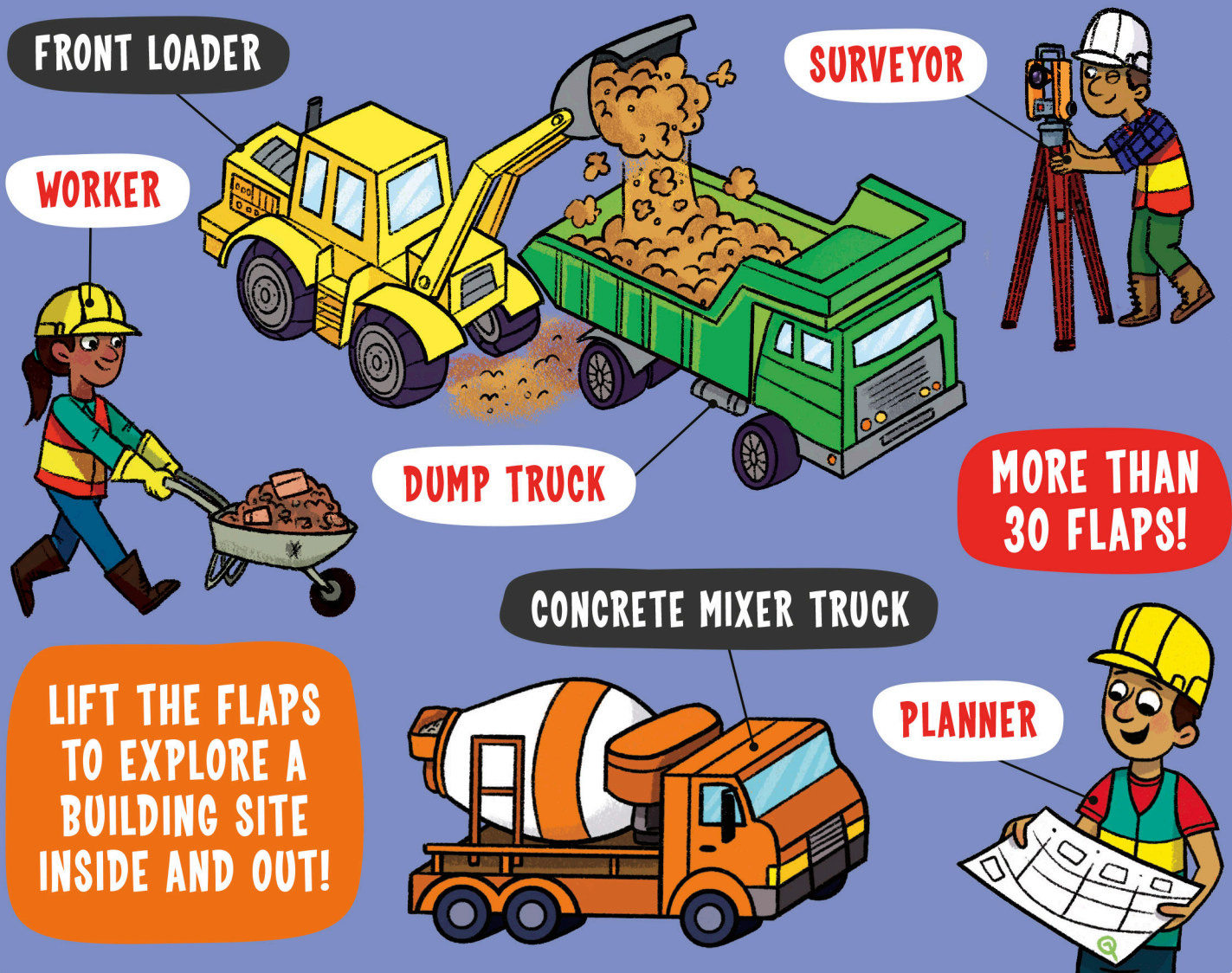
LITTLE EXPLORERS LET'S GO

BUILDING SITE



A BUSY BUILDING SITE

New houses, schools and skyscrapers are made on a building site. It takes a team of people to put a new building together. These workers are getting started on a new job and there is lots to do.

KEEP OUT!

A building site can be dangerous! There are big machines driving around and deep holes in the ground. Signs and high fences keep people out.

Office work

This is the site office. Inside, the workers in charge keep the build on track.

Good morning, Maria!

Let's get to work, team!

Good morning, Ollie!

Bright and early

Workers arrive at the building site early in the morning to make the most of the day.

Hard hat

Hi-vis jacket

Thick gloves

Safety boots

Tool belt

Toolbox

Useful tools

Workers carry some tools in their tool belt and some in a toolbox.

Muddy boots

The building site can get very muddy! Workers can clean up their boots at a boot wash station.

What is in here?

Boot wash station

Dressed for the job

The workers wear special safety gear. A hard hat and tough boots protect them from falling objects. A bright hi-vis jacket makes them easy to spot.

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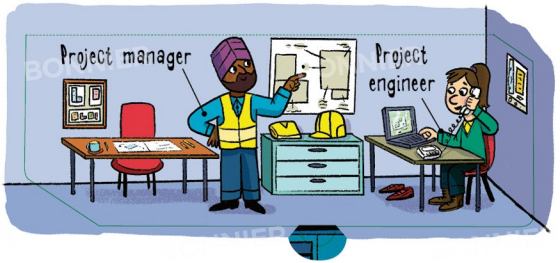

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The project manager makes sure that everything on the building site is safe and that the build gets finished on time. The project engineer orders all the building materials. They make lots of phone calls to check that nothing runs late.

What do workers keep in their toolbox?

1. Trowel
2. Tape measure
3. Drill
4. Screwdriver
5. Screws
6. Nails
7. Hammer

Some big building sites have an area called a canteen. The workers go there on their lunch break to relax or to buy food and hot drinks. They keep spare clothes and kit in lockers.

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PREPARING TO BUILD

Sometimes old buildings need to be knocked down before new ones can be built. This is called demolition. Once the old buildings are cleared, there is lots to do to make sure the ground is ready to build on.

Drone pilot

Looking down

A small aircraft called a drone takes photos of the building site from above. The drone pilot is on the ground and uses remote controls to fly it.

Long arm

A long-arm excavator with a grabber rips down the old buildings.

Long-arm excavator

Clear it up

A front loader scoops up rubble in its bucket. It then drops it into a dump truck so it can be taken away. Crash!

Front loader

Dump truck

Bulldozer

A bulldozer flattens the ground. It pushes earth and rocks out of the way with its huge metal blade.

Bulldozer

Surveyor

Surveyors check that the ground is level. They use a special instrument called a theodolite, and a measuring rod, to take measurements.

Surveyor

Dig down

Now the ground is flat, the work can start. An excavator digs long, deep holes called trenches. They are dug where the main walls of the building will be.

Excavator

Buried treasure

Digging machines sometimes find important objects in the ground from long ago.

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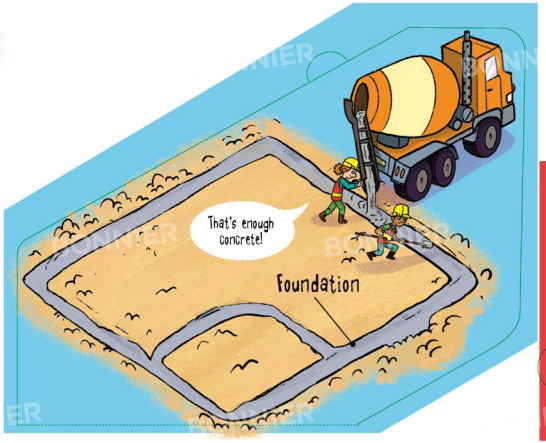

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A tiny camera on the drone takes pictures and sends them to the drone pilot's screen.

Very tall buildings can't be pulled down. Instead, they are blown up! Demolition experts use powerful explosives to collapse a building quickly and safely. BOOM!

Workers sort the rubble by picking out the bricks and stones that can be used again. Plastic, metal and concrete are put into big metal bins called skips to be recycled. This means they can be made into something else

A concrete mixer truck pours runny concrete into the trenches. Concrete dries hard to make a solid base. This is called the foundation. It stops the heavy building sinking into the ground

Archaeologists are scientists who study objects from the past. Coins, tools, pots and even bones are often found on building sites. Have you ever found anything in the ground?

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BUILDING HOUSES

Now the foundations are laid, houses can be built. There are lots of different jobs to do. It is important that they happen in the right order.

Bricks and timber

Trucks arrive loaded with the materials to build the houses.

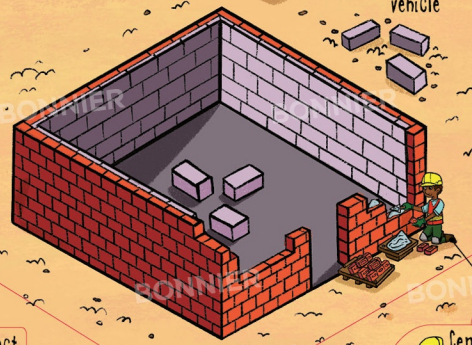
Heavy goods vehicle

Tall walls

Bricklayers build the walls. They lay rows of concrete blocks on the inside. Bricks go on the outside.

Plans

An architect is a person who designs buildings. They draw a plan for the workers to follow.



Bricklayer

Stage one

First, the concrete floor is poured. It has to dry and harden before the walls can be built.

Cement mixer

Stage three

The roof is being covered with tiles. The roofer overlaps the tiles as they lay them. This stops any gaps so rain can't get in!

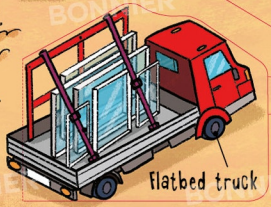
Scaffolding

A frame of metal poles, ladders and planks around the building makes a safe platform for builders to work on.

Stay safe

Roofers wear a safety harness to work high up. If they slip they won't fall far.

Roofer



Flatbed truck

Special delivery

The windows and doors have arrived on a flatbed truck.

Mini excavator

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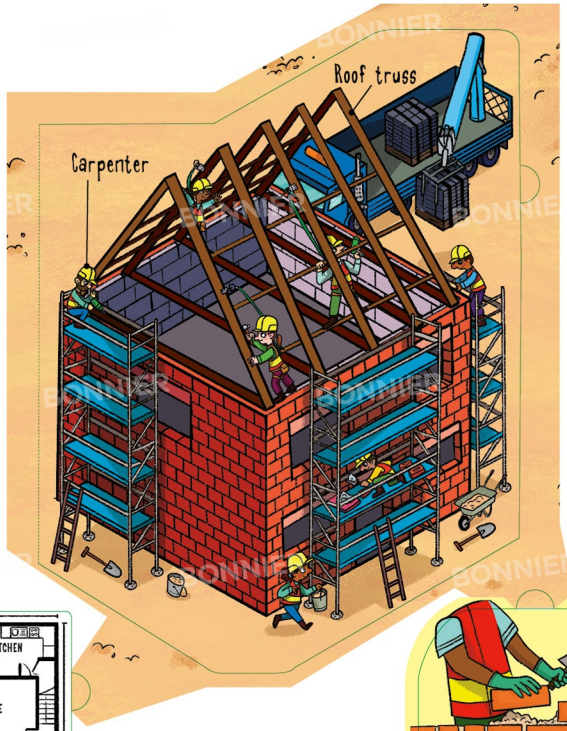

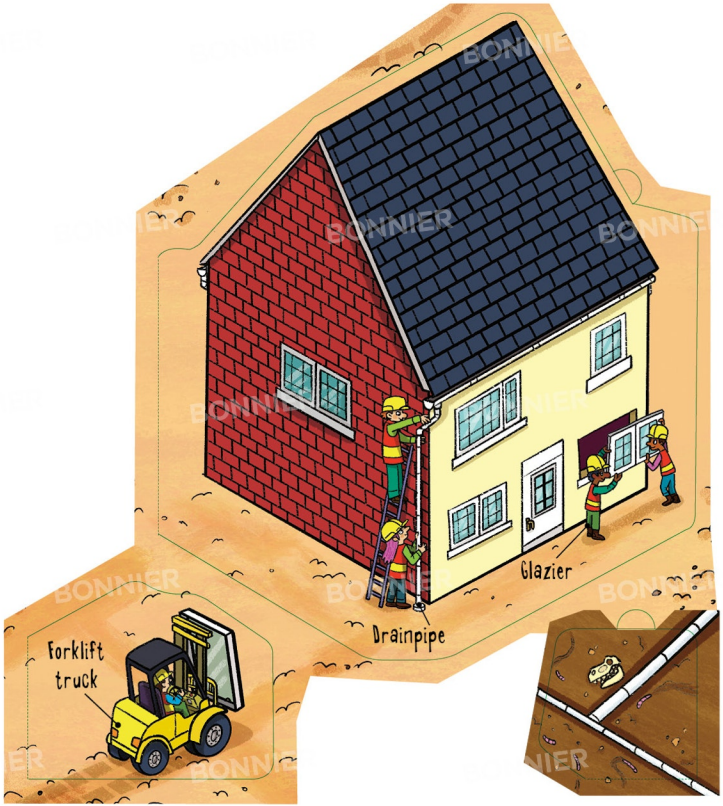

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Stage four

When it rains, water will run off the roof into the gutters and down the drainpipe.

Windows and doors are fitted into the holes in the walls. The workers who do this are called glaziers.

Workers lay pipes under the ground to carry rainwater away from the house.

The windows and doors are carefully unloaded by a forklift truck. Now the glaziers can fit them!

Stage two

Bricks, concrete blocks, wood and tiles all need to be unloaded from the heavy goods vehicle. Some trucks have a special arm to lift the heavy materials.

Carpenters work with wood. They use big bolts to fix the wooden beams together. Safe and secure!

The roof is made from big V-shaped wooden frames called trusses. They are fitted into place by carpenters.

Bricklayers use a special paste called mortar to stick bricks together. It is made by mixing sand, water and cement.

The plans show the size and position of every wall, door and window.

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HEAT, POWER AND WATER

Once a house is built, there are lots of jobs to do inside. Lots of different workers help to turn an empty building into a home, with places to wash, cook, eat and sleep.

What is happening under here?

What is being fitted on the roof?

Running water

A plumber connects water pipes to the taps, toilet, bath and shower.

That's fixed the drip!

Power up!

Electricity powers everything from TVs to toasters. Electricians place cables in the walls to carry electricity all over the house.

This needs a plug!

One more cable!

Boiling hot

This plumber is fitting the boiler. A boiler is like a giant kettle. It warms up water for washing and heating.

Finishing the walls

A plasterer spreads a thin layer of paste called plaster over the walls. When it dries the surface is smooth and ready to paint.

Working with wood

Carpenters work on the wooden parts of the house. They fit wood frames in doorways and hang the doors inside them.

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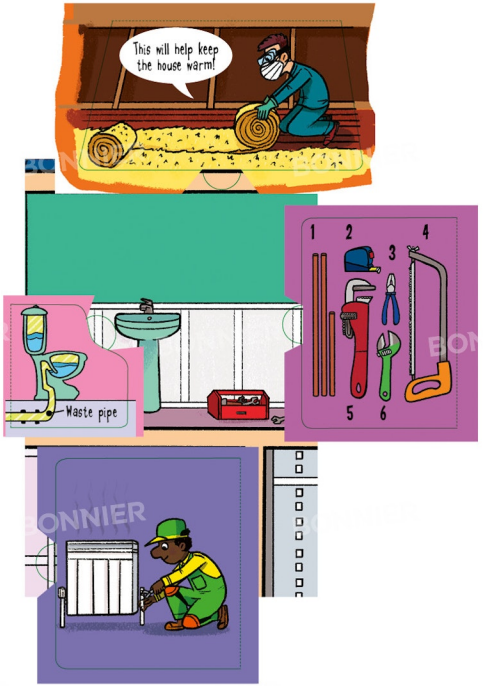

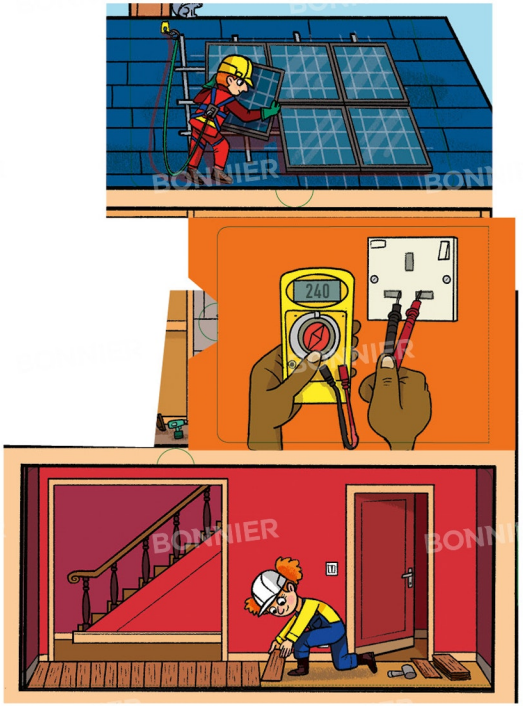

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Some houses have solar panels fixed to the roof. These can make electricity from sunlight.

Rolls of thick, fluffy material called insulation are rolled out in the loft. They act like a big blanket, keeping the house warm inside.

Electric sockets are fitted so that gadgets and machines can be plugged in. Switches are wired so that lights can be turned on with one click! Electricians check the power with a special meter.

A plumber's toolkit includes:

1. Pipes
2. Tape measure
3. Pliers
4. Saw
5. Wrench
6. Spanner

Waste pipes take used water and toilet waste away.

Wooden stairs need to be fitted. Wooden floors need to be put down, too.

Pipes carrying hot water fill the radiators. This makes the house warm. Cosy!

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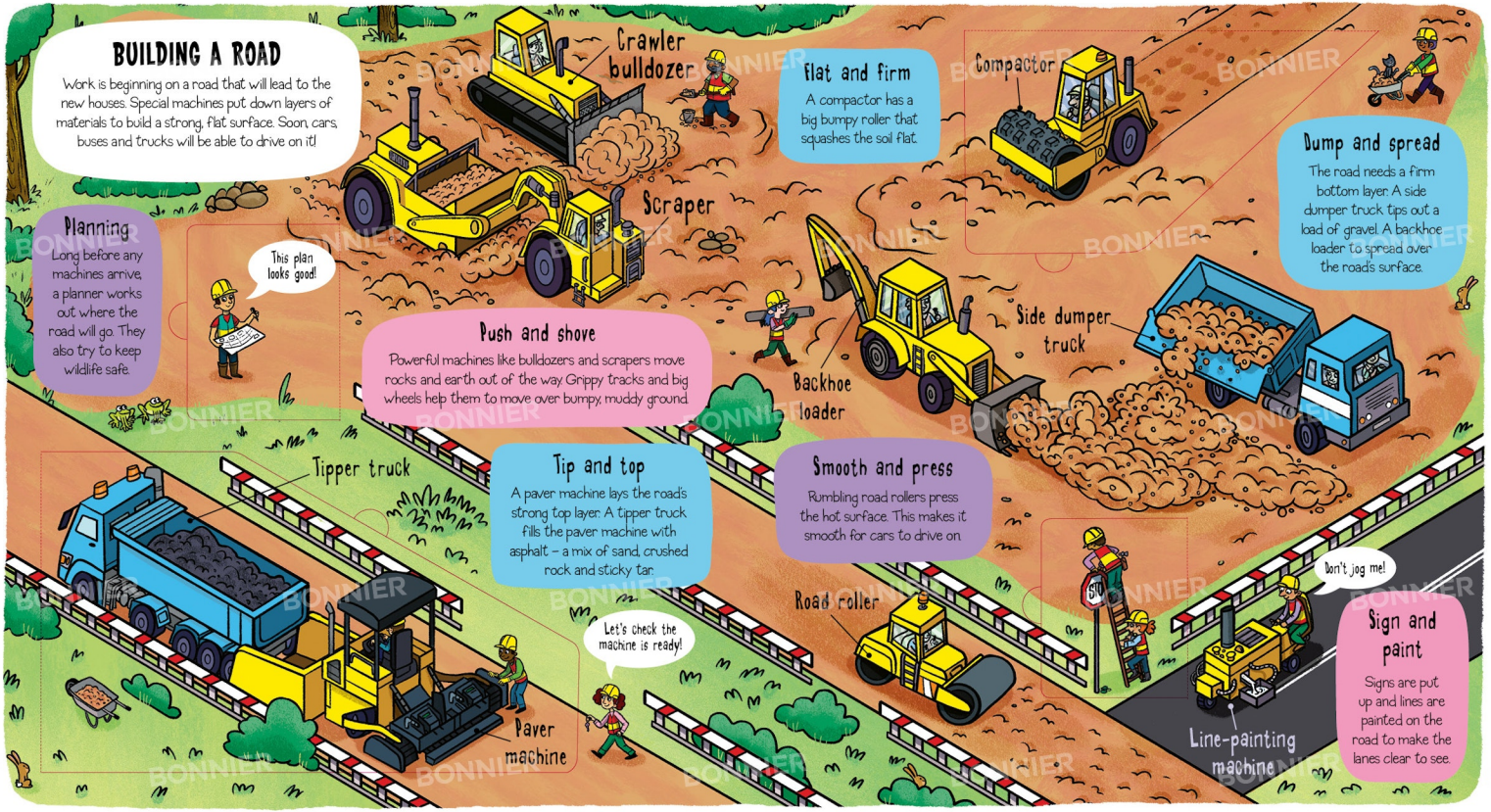

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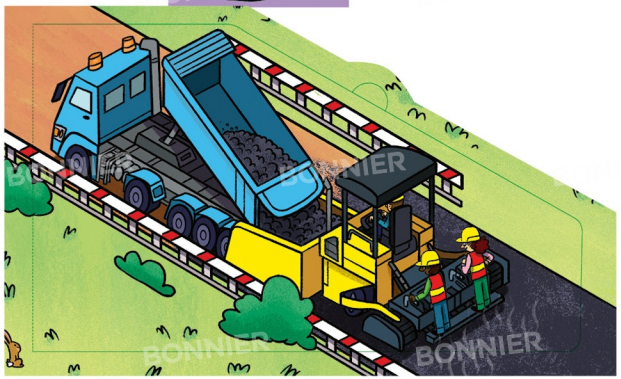

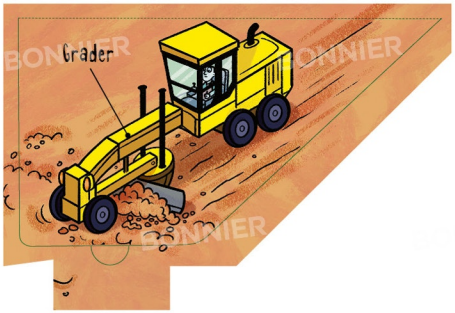

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A grader machine pulls its slanted blade over the roads surface. This makes the road slope a little bit so that rain can run off into drains. This helps to stop the road from flooding

When the plan has been approved, the machines can arrive!

Road signs can tell drivers to slow down for people or wildlife.

The paver machine moves along very slowly, leaving a smoking hot layer of asphalt behind. The tipper truck moves with the paver machine, so that it can keep it topped up with asphalt.

When the asphalt has cooled it makes a hard surface that tyres can grip.

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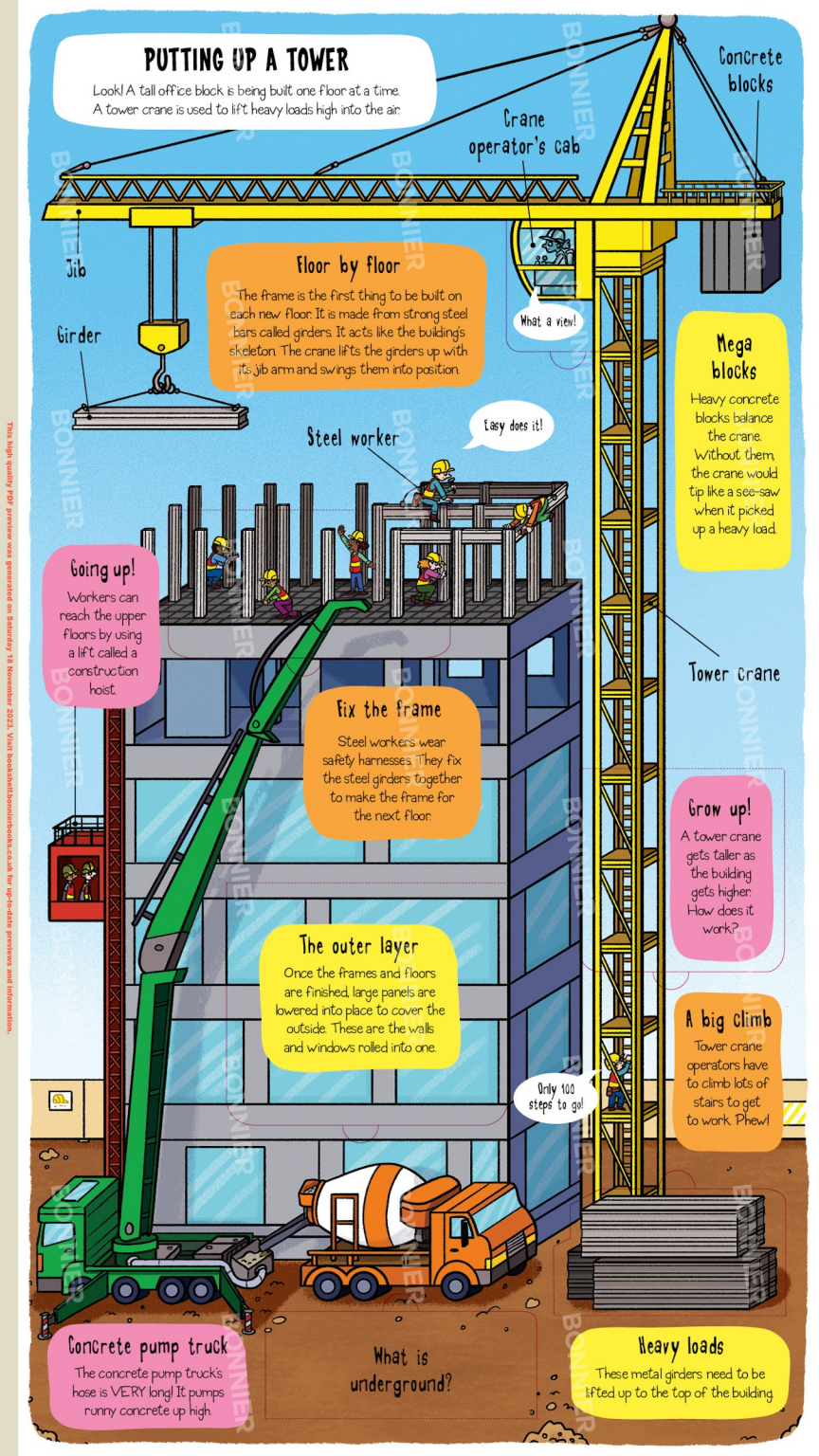

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Tall buildings need to be built on an extra-strong base to stop them from sinking. Concrete poles, called piles, are pushed deep into the ground. A slab of concrete is put on top.

The crane operator lowers the cable and hook to the ground. Workers attach the load to the hook and give the signal to lift over the walkie-talkie.

The lower floors are being finished inside while the top floors are still being built. Workers fit lifts, water pipes and electricity cables. Office fitters set up furniture, ready for people to come to work.

A special frame raises part of the tower up, then a new section is slotted into the gap. This is called 'climbing'.

When the tower's frame is finished the floors can be made. Strong steel sheets are laid over the beams, then a metal mesh is fixed on top. Runny concrete is poured on top. Now the workers can smooth out the surface.

The crane operator uses controls to move the jib.

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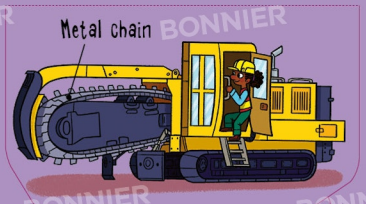
AMAZING MACHINES

Machines can help people carry out difficult or dangerous jobs. Lifting, drilling and digging are no problem for these mighty machines! Which one is your favourite?

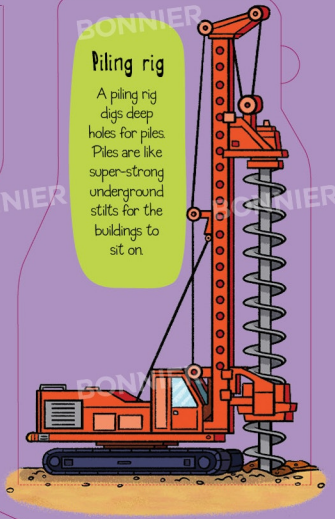
Mini dumper

This dumper might be little, but it can still move heavy loads.



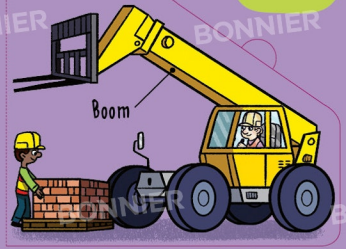
Piling rig

A piling rig digs deep holes for piles. Piles are like super-strong underground stilts for the buildings to sit on.



Demolition robot

When walls need tearing down in tight spaces, this remote-controlled robot is the machine for the job.



Trencher

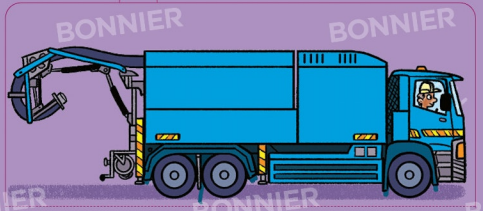
A trencher looks like a giant chainsaw! This machine can dig long, narrow holes called trenches, for pipes and cables to be laid in.

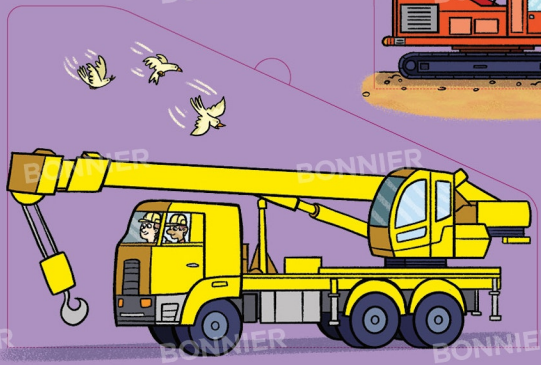
Telescopic handler

This machine has a long arm called a boom. It has sections that slide out, just like a telescope.

Suction excavator

This machine is like a giant vacuum cleaner! It uses a big, bendy hose to suck up earth from underground.





Mobile crane

This mighty lifting machine has wheels so it can be driven to wherever it is needed.

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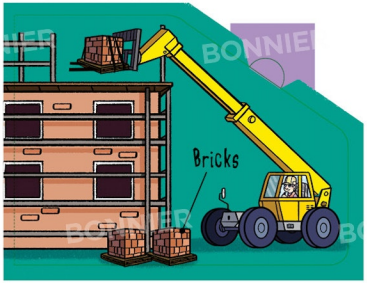

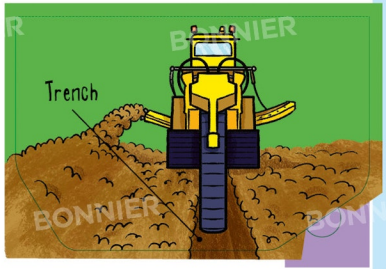

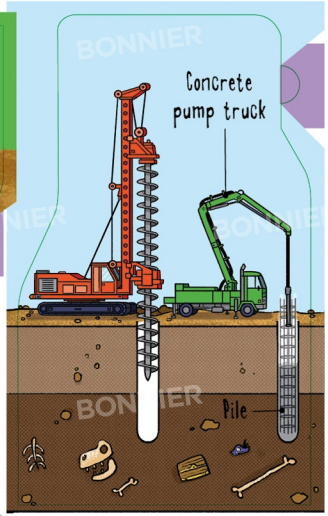

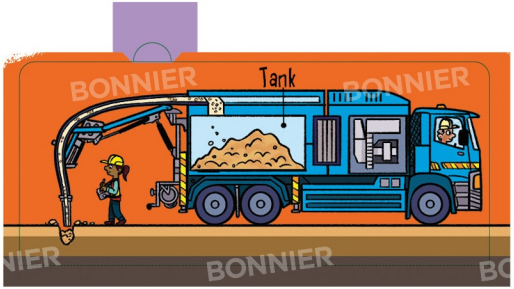

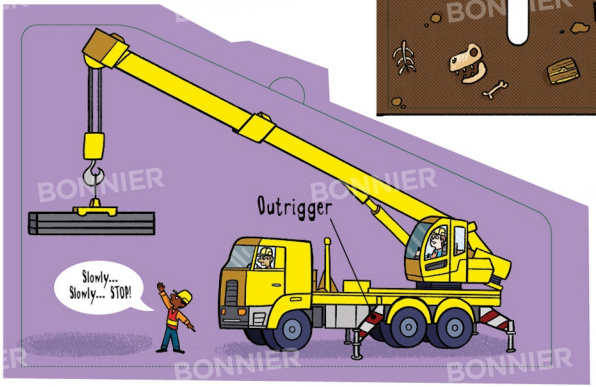

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The piling rig has a giant turning screw. This pushes into the ground to make a deep hole. Concrete is then poured into the hole and a metal cage is lowered down. This makes a very strong pile.

A metal chain with sharp teeth rips into the ground. It tears through rubble and tree roots with no trouble.

The telescopic handler can lift loads of heavy bricks and tiles up to three floors high using its long, strong arm.

The crane has one cab for the truck driver and one for the crane operator. Big metal feet called outriggers slide out to keep the crane steady when it is lifting.

The operator controls the hose with a remote control. The earth gets sucked into a big tank inside the excavator. When the tank is full it can tip sideways to empty its load.

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TIDY-UP TIME

The work is almost finished on the building site. The houses are nearly ready for people to move in. Before they do, there are some finishing touches for the workers to do!

Make it green

Green spaces are places that everyone can enjoy. Rolls of grass called turf are laid out and young trees are planted.

Clean the windows

Soapy water and a rubber scraper makes the dusty glass shine.

Window cleaner

Lots of soap!

Finishing the job

Now that the work is done, the big machines can be taken to the next building site.

See you on the next job!

Take it away

Most of the machines are loaded onto flatbed lorries to be taken away. They are much too slow to drive on normal roads.

flatbed lorry

Great job, team!

A job well done

Everyone has worked together to get the building project finished on time. Now the workers can go home.

Clean up

Workers collect their tools and make sure everything is left clean and tidy.

There, nice and tidy!

What's going on here?

Do you remember what jobs these people do?

Look back through the book to see if you can find them.

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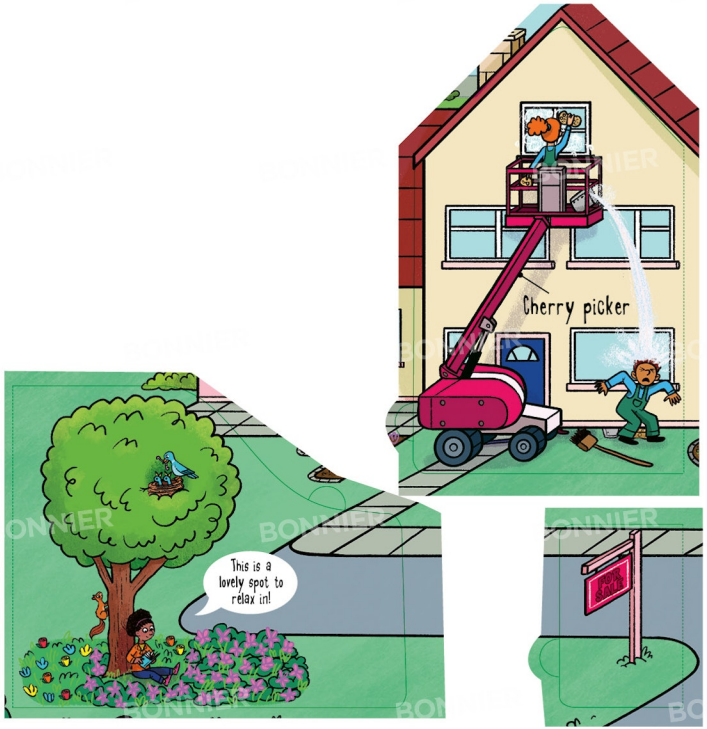

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A machine called a cherry picker lifts workers up so that they can reach the upstairs windows.

It's a For Sale sign. This house is ready for someone to buy. Have you ever moved house?

As the young trees grow they will provide homes for wildlife. People will be able to enjoy them too.

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