

LITTLE EXPLORERS LET'S GO →

BUILDING SITE

FRONT LOADER

SURVEYOR

WORKER

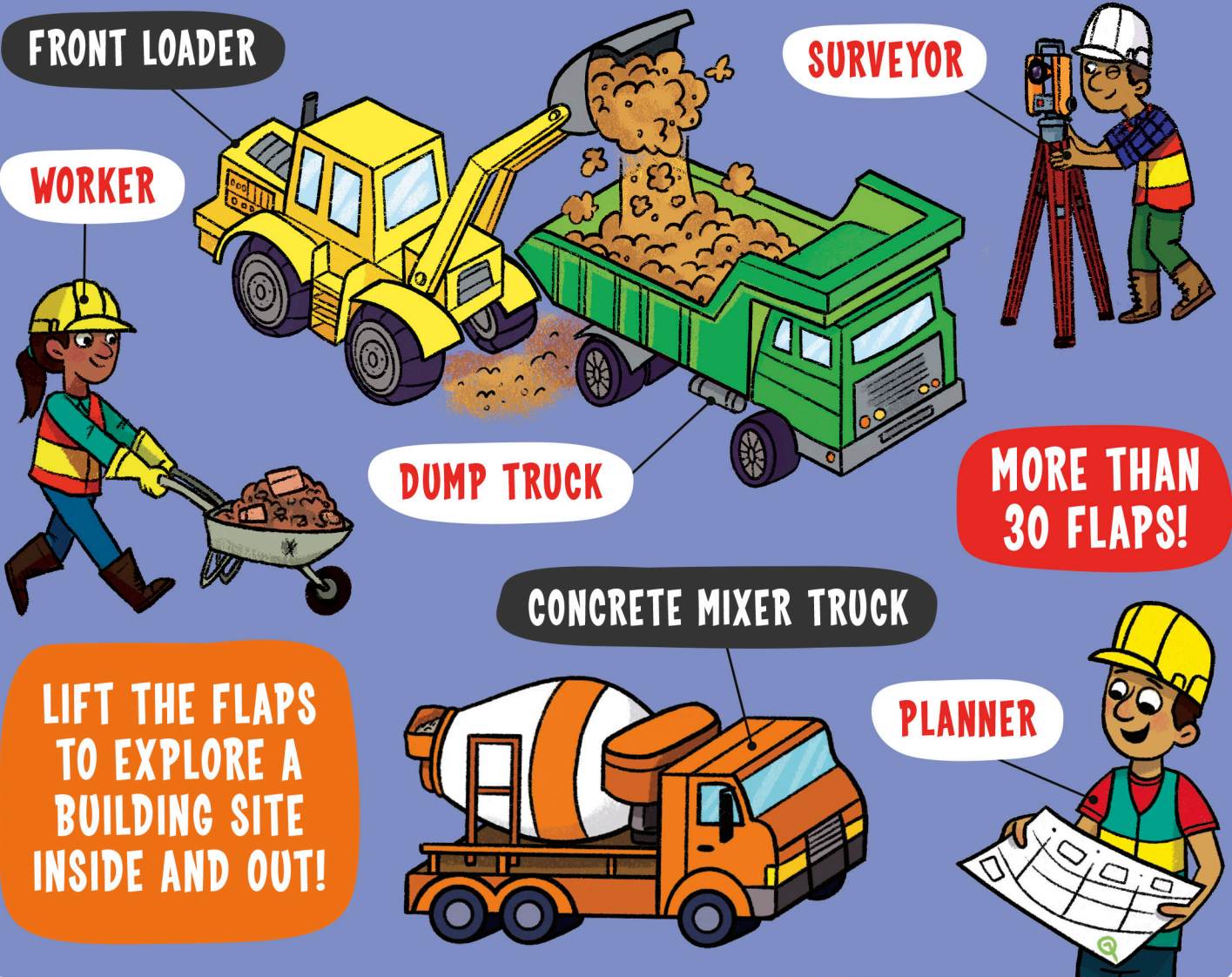
DUMP TRUCK

MORE THAN
30 FLAPS!

CONCRETE MIXER TRUCK

PLANNER

LIFT THE FLAPS
TO EXPLORE A
BUILDING SITE
INSIDE AND OUT!



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.

Let's get to work, team!

Bright and early

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

Good morning, Ollie!



Hard hat

Hi-vis jacket

Safety boots

Thick gloves



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.

Tool belt

Toolbox



Office work

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

Good morning, Maria!

Useful tools

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



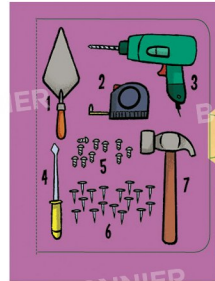
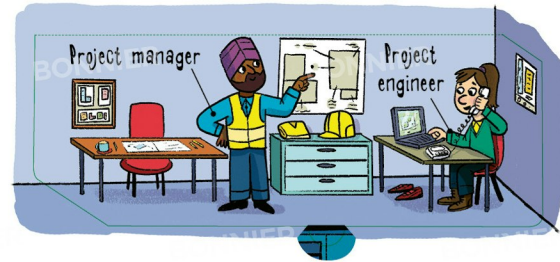
Muddy boots

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





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.

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.

What do workers keep in their toolbox?

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



Drone pilot

Drone

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.

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.



Long arm

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

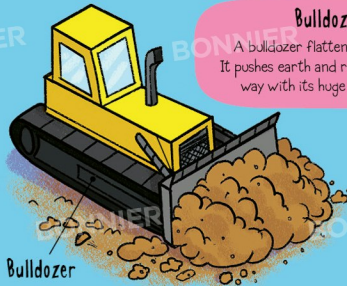
Long-arm excavator

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

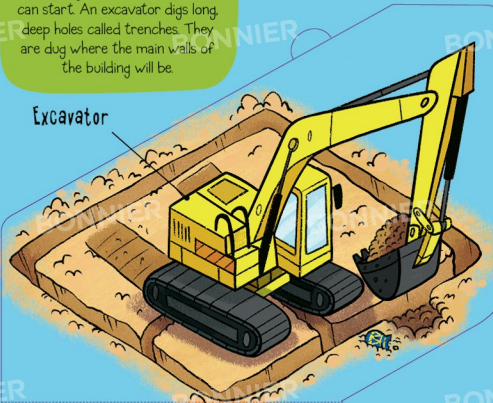
A bulldozer flattens the ground. It pushes earth and rocks out of the way with its huge metal blade.

Bulldozer

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



Surveyor



Ready when you are!

Theodolite



Surveyor

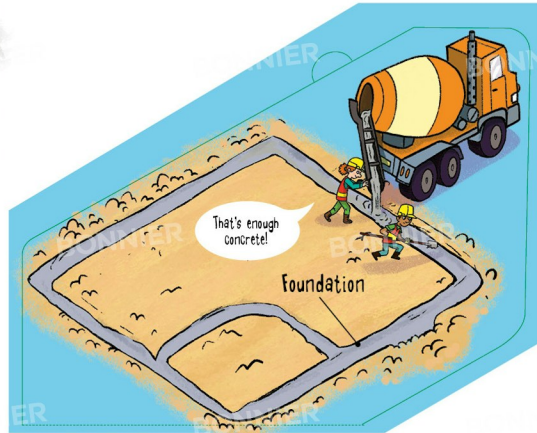
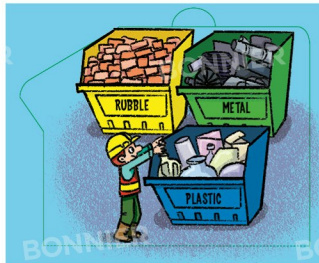
Surveyors check that the ground is level. They use a special instrument called a theodolite, and a measuring rod, to take measurements.

Buried treasure

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



Stop digging!



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?

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.

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.

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!

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

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

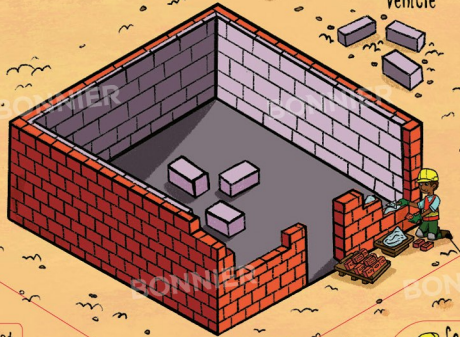


Plans

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



I'll check the plans!



Bricklayer

Tall walls

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

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!



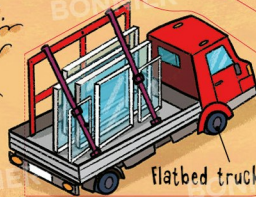
Stay safe

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

Roofer

Scaffolding

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



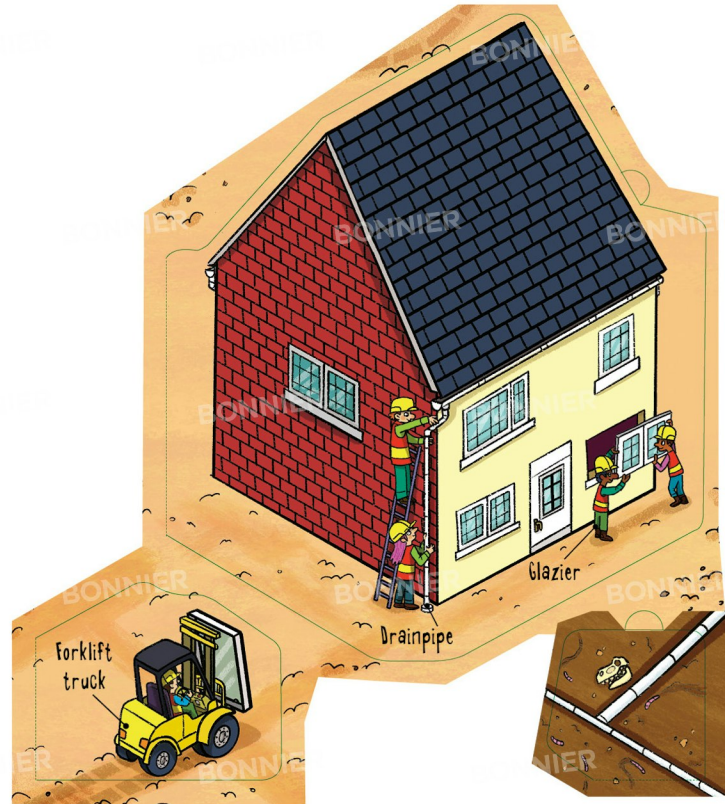
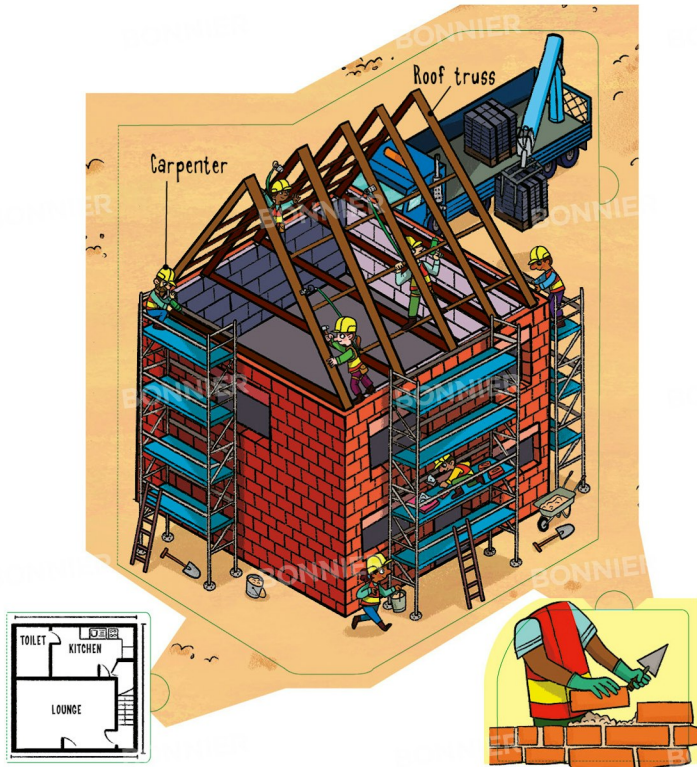
Flatbed truck

Special delivery

The windows and doors have arrived on a flatbed truck.



Mini excavator



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.

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?

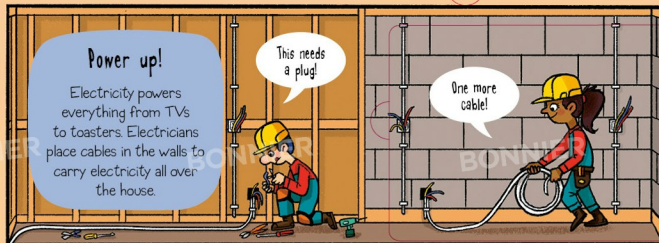
Running water

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



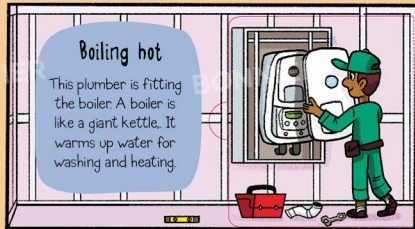
Power up!

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



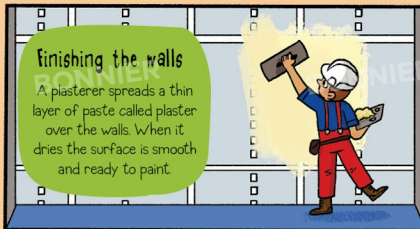
Boiling hot

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



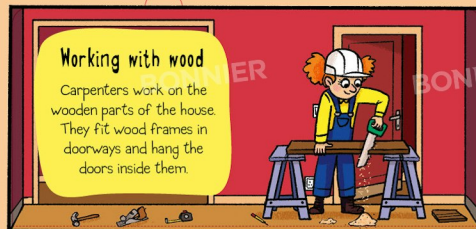
Finishing the walls

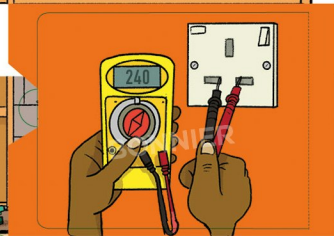
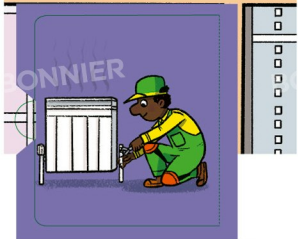
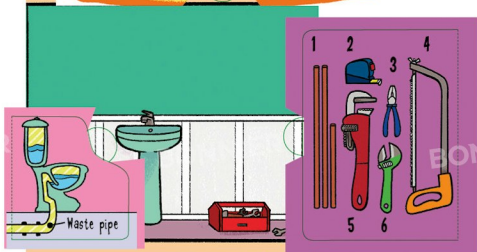
A plasterer spreads a thin layer of paste called plaster over the walls. When it dries the surface is smooth and ready to paint.



Working with wood

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





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

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.

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

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

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.

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

BUILDING A ROAD

Work is beginning on a road that will lead to the new houses. Special machines put down layers of materials to build a strong, flat surface. Soon cars, buses and trucks will be able to drive on it!

Planning

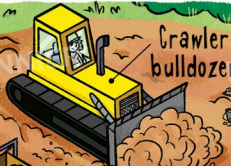
Long before any machines arrive, a planner works out where the road will go. They also try to keep wildlife safe.



This plan looks good!

Push and shove

Powerful machines like bulldozers and scrapers move rocks and earth out of the way. Grippy tracks and big wheels help them to move over bumpy, muddy ground.



Crawler bulldozer



Scraper

Flat and firm

A compactor has a big bumpy roller that squashes the soil flat.



Compactor

Dump and spread

The road needs a firm bottom layer. A side dumper truck tips out a load of gravel. A backhoe loader to spread over the road's surface.



Side dumper truck



Backhoe loader

Tip and top

A paver machine lays the road's strong top layer. A tipper truck fills the paver machine with asphalt - a mix of sand, crushed rock and sticky tar.



Tipper truck

Paver machine

Let's check the machine is ready!

Smooth and press

Rumbling road rollers press the hot surface. This makes it smooth for cars to drive on.



Road roller

Sign and paint

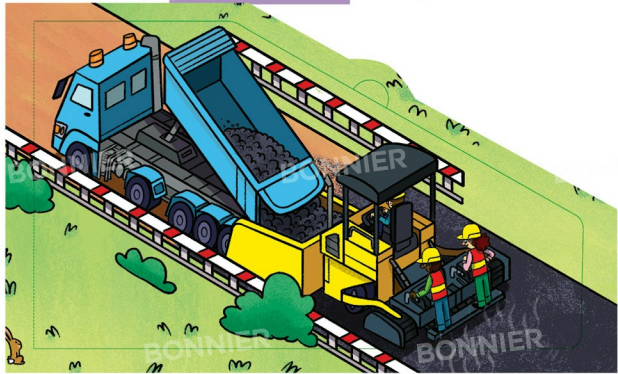
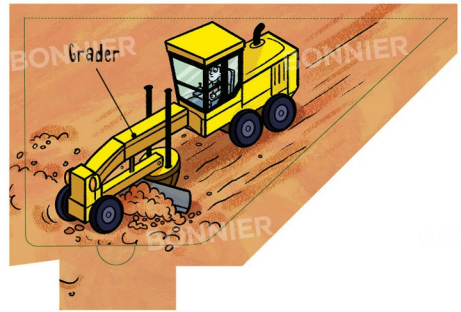
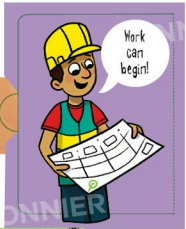
Signs are put up and lines are painted on the road to make the lanes clear to see.



Don't jog me!



Line-painting machine



A grader machine pulls its slanted blade over the road 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.

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

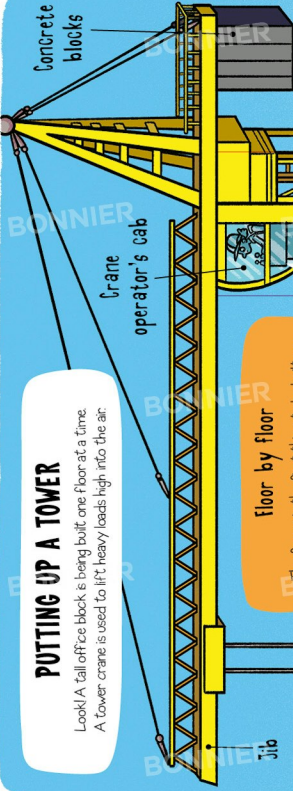
When the plan has been approved, the machines can arrive!

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.

PUTTING UP A TOWER

Look! A tall office block is being built one floor at a time. A tower crane is used to lift heavy loads high into the air.



Concrete blocks

Crane operator's cab

Floor by floor

The frame is the first thing to be built on each new floor. It is made from strong steel bars called girders. The crane lifts the girders up with its jib arm and swings them into position.

What a view!

Jib

Girder

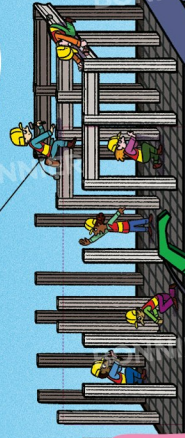
Mega blocks

Heavy concrete blocks balance the crane. Without them the crane would tip like a see-saw when it picks up a heavy load.

Tower Crane

Easy does it!

Steel worker



Going up!

Workers can reach the upper floors by using a lift called a construction hoist.

Fix the frame

Steel workers wear safety harnesses. They fix the steel girders together to make the frame for the next floor.



Grow up!

A tower crane gets taller as the building gets higher. How does it work?

The outer layer

Once the frames and floors are finished, large panels are lowered into place to cover the outside. These are the walls and windows rolled into one.

Only 100 steps to go!

A big climb

Tower crane operators have to climb lots of stairs to get to work. Phew!



Concrete pump truck

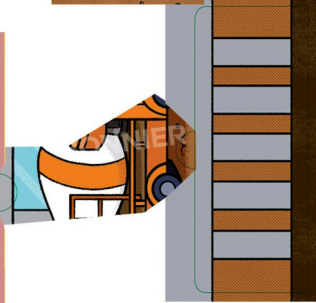
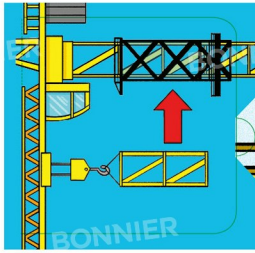
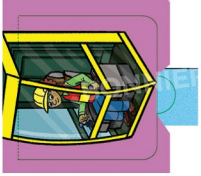
The concrete pump trucks' hose is VERY long! It pumps runny concrete up high.

Heavy loads

These metal girders need to be lifted up to the top of the building.



What is underground?



Tall buildings need to be built on an extra-strong base to stop them from sinking. Concrete piles called piers 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 bad 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. Rummy concrete is poured on top. Now the workers can smooth out the surface.

The crane operator uses controls to move the job.

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?

Ready to unload!



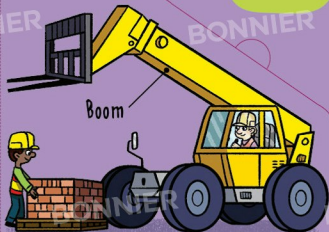
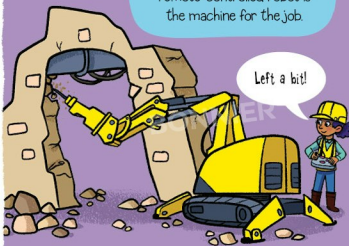
Mini dumper

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

Demolition robot

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

Left a bit!



Telescopic handler

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

Metal chain

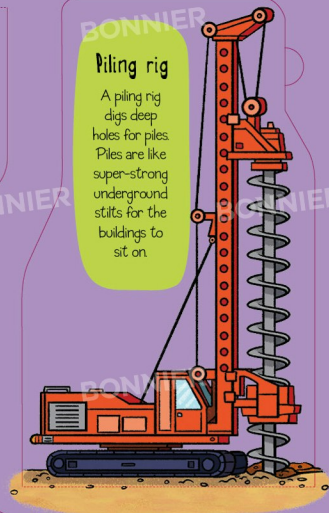


Trencher

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

Piling rig

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



Suction excavator

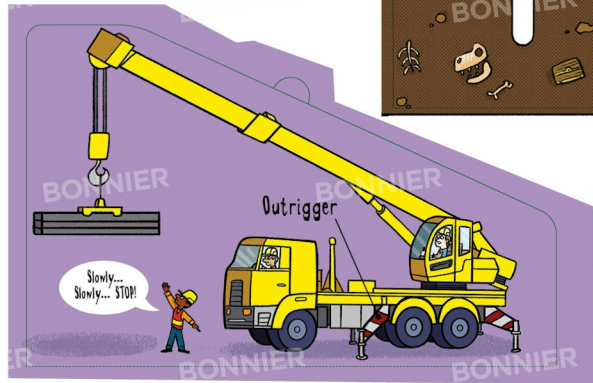
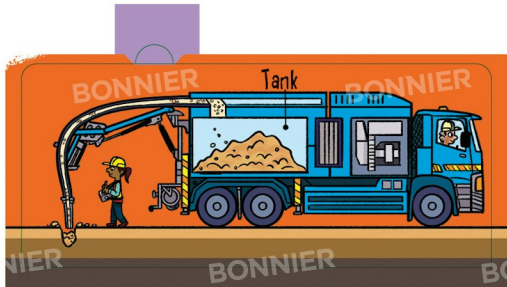
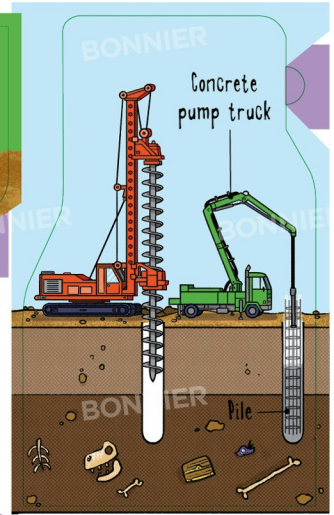
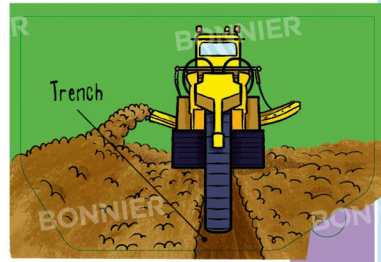
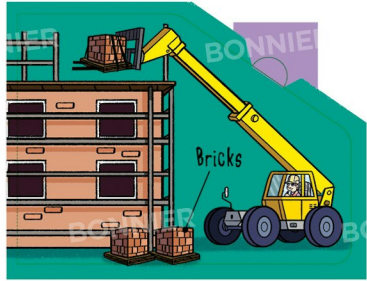
This machine is like a giant vacuum cleaner! It uses a big, bendy hose to suck up earth from underground.



Mobile Crane

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





The piling 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 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.

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

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.

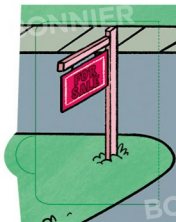
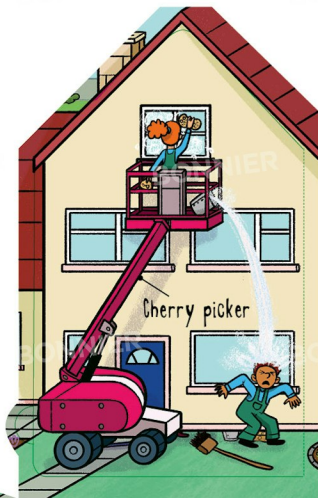
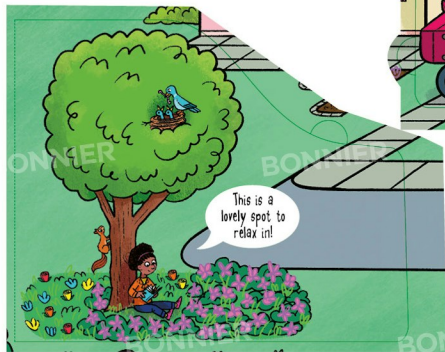
What's going on here?


There, nice and tidy!

Do you remember what jobs these people do?

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








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.