# Swadlincote Townscape
# KS1 Science Rot or Repair
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Please note: maps, photos and worksheets date from Sept 2018.
Some buildings may have enjoyed further restoration work when you try out these activities- if so, compare the photographs with the appearance of the building and adapt the session accordingly!
Please let us know if you spot anything that has changed:
Environmental Education Project team: rosliston@south-derbys.gov.uk 01283 535039 or find us on Facebook 'Environmental Education Project at Rosliston Forestry Centre'
Have fun!

# Swadlincote Townscape
# KS1 Science Rot or Repair
# Teacher Session Notes

**Aims and overview:**

The aim of this session is to look at the different building materials used in the High Street, their range of properties and uses and the impact of weathering.
It is part of the Townscape scheme which looks at the historical buildings in the High Street and pupils will become 'building detectives' to consider their state of repair.

- If you wanted to do the whole session it lasts approximately 2 hours and includes a range of different activities and experiments.
- All can be done in the town centre and some can also be done in school.
- There are a variety of activities that you can do and each session is listed below with approximate times, however, you can adapt the times to suit.
- Read through all the session notes to decide what activities you would like to do.
- Children should be in small groups with an adult.
- The pupils are going to be 'building detectives' and they will be exploring the High Street and the Delph in Swadlincote Town Centre to find out if the materials used in buildings here are in a good state of repair (are they damaged or look like new) and if not, to discover why.
- Consider ways in which the buildings could be damaged: weather; wind, rain, heat from sun, animals (pigeon poo) and plants.

- If you are going to do the experiment you need to set it up at the beginning of your session so it has time to work while you are doing the survey and other activities. It needs to be left for about 1 hour. Decide where to leave the experiment- make a 'friend' with a shop keeper or put it in a bag and carry it with you. (A large reusable shopping bag with flat base would be best)

**Learning Outcomes:**

- **Learning Outcome 1:** Observe and explore the different materials used within the buildings in Swadlincote.
- **Learning Outcome 2:** Understand materials have different properties.
- **Learning Outcome 3:** Understand that one material can have several uses.
- **Learning Outcome 4:** Link the properties of building materials to their uses and functions. On a simple level consider other reasons why materials have been used in buildings within the town – cost, appearance.
- **Learning Outcome 5:** Simple understanding of 'weathering' i.e. that, over time, the weather, plant and animal activity can affect the appearance and state of building materials. Preventing weathering and so maintaining the building materials can be a constant battle!

**Links to National Curriculum:**

**Science:**

Sc2/3.1a identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses,

**Geography:**

Ge1/1.4d use simple fieldwork and observational skills to study the geography of their school and its grounds and the key human and physical features of its surrounding environment.

**Resources for the whole session:**

- Camera. Check that the camera is charged.
- First Aid kit.
- Wet wipes for post experiment.
- Playground chalk
- Map out- lining the position of the shops
- Clipboards, pencils and enough scrap paper, poly pockets (if raining)
- **Worksheets: Spot the Building Material pupil worksheet KS1 and What Materials Are Used In Buildings? pupil worksheet KS1**
- **Answer sheets for What Materials Are Used In Buildings?**
- **Rot or Repair Science Background**
- **Worksheets: Swadlincote Quick Survey KS1 & KS2 pupil sheet or Swadlincote Building Survey KS1 pupil sheet (1 per group)**
- **Answer sheets for the survey sheets**
- **How Good is Your Building? Step game**
- **Worksheet: The Right Material for the Right Part**
- **Word Map for Building Materials**
- **Word Map for House Parts**
- **Word Map for Properties**

**For the experiment:**

- **Worksheets: Do Hard Building Materials Absorb Water? Pupil sheet KS1 and KS2**
- **Answer sheet Do Hard Building Materials Absorb Water? Pupil sheet KS1 and KS2**
- Plastic cup/ 500ml plastic tub with wide 'mouth' and screw lid.
- 500ml blue water
- Small sieve (i.e. an icing sugar duster or tea strainer)
- Large reusable shopping bag with flat base
- Sample Materials e.g. small samples of plastic, stone, granite, metal, wood, painted wood, glass, slate and brick which can be obtained from builder's merchants or contact the Environmental Education Project at Rosliston Forestry Centre.

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**Materials Session:**
On your way to the High Street you may do some observations of the buildings. Look at the materials and their uses in the buildings. Recap on names of materials, properties and uses. Use the examples **Spot the Building Material pupil worksheet and What Materials Are Used In Buildings?**

**Experiment:** (15 mins.)
You are going to set up an experiment to see which materials absorb (take in) water and therefore could damage buildings over time. Water, if left to soak in, can weaken and damage some materials. Damp can also make people ill.
Use Experiment sheet: **Do Hard Building Materials Absorb Water? Pupil sheet KS1 and KS2.**
Follow the instructions. Make predictions and write on worksheets.

**Survey Session:** (45 mins.)
You are going to carry out a survey of the buildings along the High Street so that you can find out what kinds of materials used to make the buildings here are damaged, why and maybe think of ways we could stop the damage happening as this could prevent further costs to the owners.
Model how to do the survey using the Town Hall. If it is in good repair, discuss why it is: windows replaced by UPVC, regularly painted, wood replaced, gutters cleared, bird faeces washed off regularly etc.

Use the worksheets to record your findings: **Rot or Repair Swadlincote Quick Survey KS1 and KS2 or Rot or Repair Swadlincote Building Survey KS1 pupil worksheet.** The quick survey has some visual examples of damage on them. Can the children see why the materials would be no good after a time? What do they think would happen to the rotten window sill?

- Position each group at a different starting point on the High Street. E.g. 7, High Street (currently to let). Card Factory, Evening Telegraph Newsagent, Fortune Garden, Greggs, Co-op Travel and Peacocks.
- Allow 30 minutes and state return time.
- Give a return meeting point- e.g. The Delph (Market days Tuesday and Friday)
- Before return, each group to choose one building and take photos of the roof, gutter, upper windows, lower windows, upper wall, lower wall and door to be used for discussion later. **(Not essential)**
- Safety: ensure children are not reading and walking at the same time.
- Meet back up on The Delph.

- Discuss findings in the survey taking one example from each group.
- Look at the experiment set up. Note results and complete the questions. Discuss their conclusions as you go round.

**Plenary:** (15 mins.)
The photographs taken of their chosen building (roof, gutter, upper windows, lower windows, upper wall, lower wall and door) can be used here to discuss the state of repair as a group. Whose building has rotten window sills? Whose building has lots of pigeon poo?

**Or** (check you are able to use the Delph – for example there are no market stalls on it!)
**How Good is Your Building step game**. (A game where pupils explore how change can affect a certain building for good or bad.)

Ask what they have learnt.

**Additional Tasks:**

- Design a poster to explain to shop owners the process of weathering and how they could stop or slow it down.
- Use the worksheet **The Right Material for the Right Part** and the **word maps** as an activity in school before or after the session.

Please note: maps, photos and worksheets date from Sept 2018.
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Please let us know if you spot anything that has changed:
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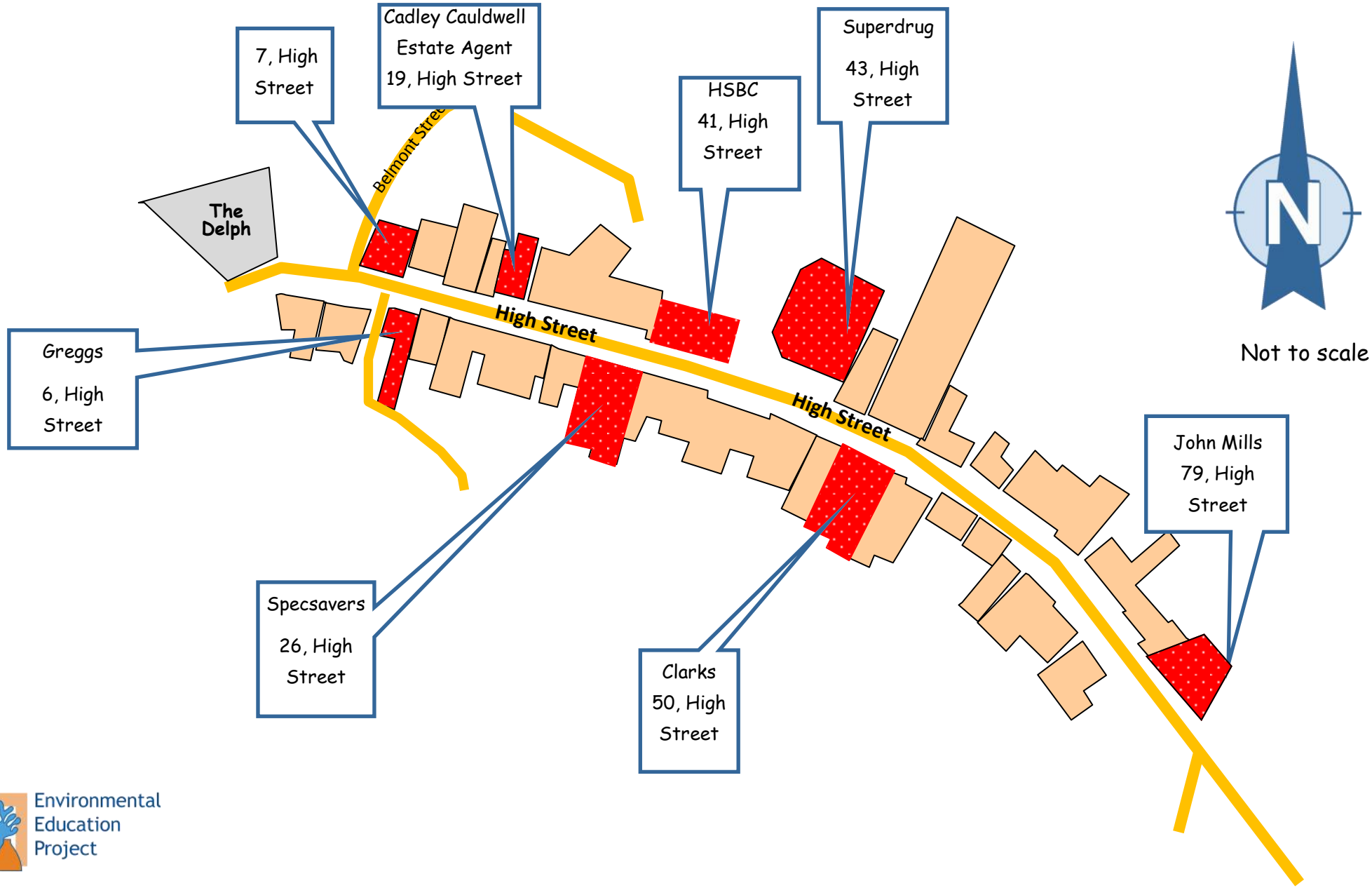
Have fun!

# Townscape 'Rot or Repair' Map

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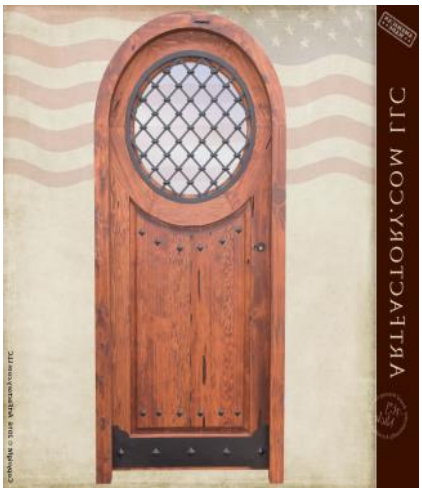
# Rot Or Repair
# Spot The Building Materials
# KS1 Pupil Worksheet (1)

Look for these materials .

Tick them off as you find them.

www.alamy.com



www.artfactory.com

www.decoist.com

www.harrisreading-ilders.co.uk

www.houseofanderson1905.co.uk

http://roofinginorpington.co.uk

www.warmwall.net

uk.pinterest.com

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# Rot Or Repair

## Spot The Building Materials

## KS1 Pupil Worksheet (2)

www.whitespace.org.uk

www.wikiwand.com


londonpostcodewalks.wordpress.com

www.hotel-r.net

www..ebay.co.uk

www..everest.co.uk

http://metalbuildinghomes.org

https://modernize.com

www.agaceroofing.com

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# Rot or Repair
## KS1 Pupil Worksheet
## What Materials Are Used In Buildings ?

SWADLINCOTE TOWNSCAPE HERITAGE SCHEME

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How many different types of **materials** are used in buildings?

How many do you know ?

Choose from: **Stone** **Wood** **Brick** **Metal** **Slate** **Plastic** **Glass** **Paint**

| | | | |
|---|---|---|---|
|  |  www.artfactory.com |  www.hotel-r.net |  www.alamy.com |
|  www.houseofanderson1905.co.uk |  https://modernize.com |  http://metalbuildinghomes.org |  www.whitespace.org.uk |

Extension: Do you know the names of any other material used in buildings? _____

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# Rot or Repair

## KS1 & KS2

## What Materials Are Used In Buildings?

## ANSWERS

There are many different types of materials used in buildings.
How many do you know? How many do you need to look up?

| | | | |
|---|---|---|---|
|  Paint www.decoist.com |  Wood www.artfactory.com |  Stucco uk.pinterest.com |  Brick www.alamy.com |
|  Plastic www.houseofanderson1905.co.uk |  Shiny, coloured tiles londonpostcodewalks.wordpress.com |  Clay tiles www.wikiwand.com |  Stone www.hotel-r.net |
|  Terracotta www..ebay.co.uk |  Glass www.whitespace.org.uk |  Lead www.agaceroofing.com |  UPVC www..everst.co.uk |
|  Roof felt http://roofinginorpington.co.uk |  Pebble dash www.warmwall.net |  Concrete www.harrisreading-ilders.co.uk |  Metal http://metalbuildinghomes.org |
|  Slate https://modernize.com | | | |

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# Rot or Repair
# Experiment
# Do Hard Building Materials Absorb Water?
# KS1 & KS2 Pupil Worksheet (1)

SWADLINCOTE TOWNSCAPE HERITAGE SCHEME

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## The Science Bit

Some **building materials** need protection from the wet. **Water** can **weaken** and damage materials, cause them to bend or **warp**, develop **mould** and also attract bacteria and **insects**. The **damp** conditions can also trigger **illnesses** in humans like **asthma** and other breathing problems.


www.cleanlinest.wordpress.com


www.inspectapedia.com


www.scientificamerican.com


www.ddcoatings.com

## Key Words

**asthma, building, brick, concrete, damp, glass, granite, insects, limestone, mass, material, metal, mould, painted wood, plastic, slate, warp, water, weaken, wood,**

**Your Task:** We are going to investigate if hard materials absorb water.

You will need :

- Choose six pieces of building material, each a similar size from limestone, concrete, wood, metal, painted wood, plastic, granite , brick, slate and glass.
- Plastic cup.
- 500ml plastic tub with wide 'mouth' and screw lid.
- 500ml blue water
- Small sieve

**Method**-what you DO

**Safety: wipe up spilt liquids.**

1. Make sure you know the name of each of the pieces of building material.
2. Write the names of the pieces into your results table.
3. Predict which ones you think will absorb water? Note this in column 2.

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4. Half fill the tub with the blue water.
5. Add the pieces of material. Make sure each piece is covered with water.
6. Screw the lid on tightly.
7. Leave for at least one hour.
8. Empty the tub through the sieve over a sink/drain/plastic cup.
9. Note which pieces have absorbed water in your results table.
10. Note whether your predictions were right.

## When the experiment has finished

On the High Street:

1. Carefully empty the plastic cup down the nearest drain.
2. Put all the apparatus in the bag.
3. Wipe your hands with a wet wipe.

In the classroom:

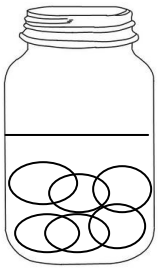
1. Wash out the tub and sieve.
2. Put back the apparatus and pieces of building material into the right box.
3. Wash your hands.

# Rot or Repair
# Experiment
# Do Hard Building Materials Absorb Water?
# KS1 & KS2 Pupil Worksheet (3)

Students name ……

## **Method** – what you DO

Label the diagram to show what you did.



## **Results** – what you SEE

| Building Material | Do you think it will absorb water? | Did it absorb water? | How did you know? | Was your prediction right? |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## **Conclusion** – what you have LEARNT

1. Which building materials absorb water?

_____

2. How do you know ?

_____

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# Rot or Repair
# Experiment
# Do Hard Building Materials Absorb Water?
# KS1 & KS2 Pupil Worksheet (4)

3. If building materials absorb water for years and years, what do you think may happen?

_____

4. Can you think of other reasons why it is useful for building materials to be waterproof i.e. do not absorb water ?

_____

5. Can you find a picture of metal and a picture of stone in buildings that have been weathered by water ?

**Evaluation** – THINKING about your experiment

1. Was your prediction correct? _____
2. This was a 'fair test' because:
   a) The one difference between the experiments was _____
   b) The factor we kept the same was _____
3. How did you keep safe? _____
4. How could you make your results more accurate? _____

_____

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# Rot or Repair

# Experiment

# Do Hard Building Materials Absorb Water?

## KS1 & 2 Pupil Worksheet (1)

## ANSWER SHEET

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## The Science Bit

Some **building materials** need protection from the wet. **Water** can **weaken** and damage materials, cause them to bend or **warp**, develop **mould** and also attract bacteria and **insects**. The **damp** conditions can also trigger **illnesses** in humans like **asthma** and other breathing problems.

www.cleanlinest.wordpress.com

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www.ddcoatings.com

## Key Words

**asthma, building, brick, concrete, damp, glass, granite, insects, limestone, mass, material, metal, mould, painted wood, plastic, slate, warp, water, weaken, wood,**

**Your task:** We are going to investigate if hard materials absorb water.

You will need:

- Choose six pieces of building material, each a similar size from limestone, concrete, wood, metal, painted wood, plastic, granite , brick, slate and glass.
- Plastic cup
- 500ml plastic tub with wide 'mouth' and screw lid.
- 500ml blue water
- Small sieve

**Method**-what you DO

1. Make sure you know the name of each of the pieces of building material.
2. Write the names of the pieces into your results table.
3. Which ones do you think will absorb water? Note this in column 2.

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4. Half fill the tub with the blue water.
5. Add the pieces of material. Make sure each piece is covered with water.
6. Screw the lid on tightly.
7. Leave for at least one hour.
8. Empty the tub through the sieve over a sink/drain/plastic cup.
9. Note which pieces have absorbed water in your results table.
10. Also note whether your predictions were right.

## When the experiment has finished:

On the High Street:

1. Carefully empty the plastic cup down the nearest drain.
2. Put all the apparatus in the bag.
3. Wipe your hands with a wet wipe.

In the classroom:

1. Wash out the tub and sieve.
2. Put back the apparatus and pieces of building material.
3. Wash your hands.

# Rot or Repair

## Experiment

## Do Hard Building Materials Absorb Water?

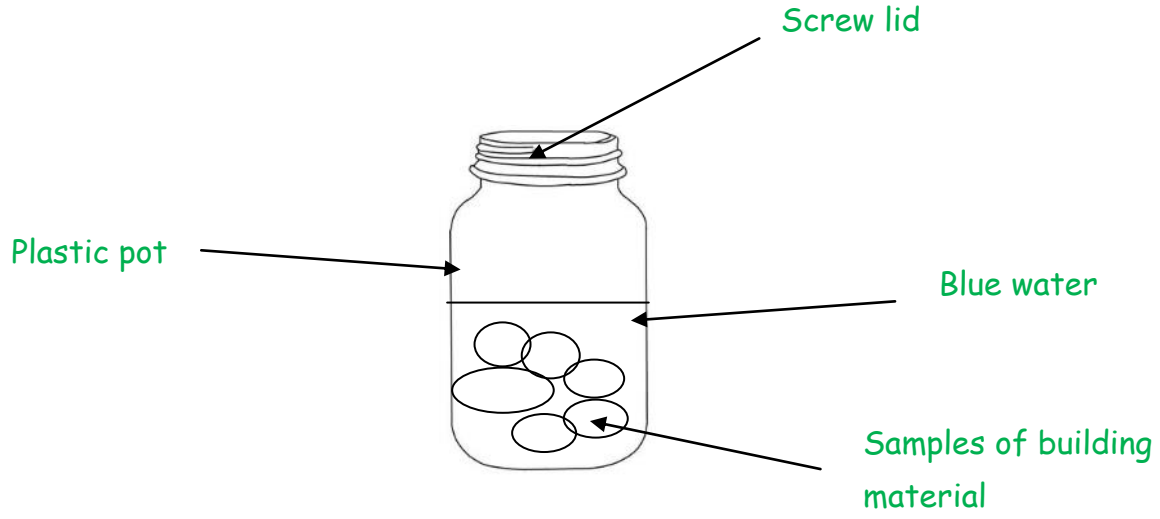
## KS1 & 2 Pupil Worksheet (3)

## ANSWER SHEET

Student name Sample Answer

**Method**- what you DID

Label the diagram to show what you did.




**Results-** what you OBSERVED

| Building Material | Do you think it will absorb water? | Did it absorb water ? | How did you know ? | Was your prediction right? |
|---|---|---|---|---|
| Wood | Y | Y | Could see blue in the wood | Y |
| Metal | N | N | There was no blue colour | Y |
| Limestone | N | Y | Could see blue in the stone | N |
| Painted wood | Y | N | There was no blue colour | N |
| Brick | Y | Y | Could see blue in the brick | Y |
| Granite | N | N | There was no blue colour | Y |

**Conclusion**- what you have LEARNT

1. Which building materials absorb water? Wood, limestone, brick
2. How do you know? They all had a blue colour at the end.

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# Rot or Repair

## Experiment

## Do Hard Building Materials Absorb Water?

## KS1 & 2 Pupil Worksheet (4)

## ANSWER SHEET

3. If building materials absorb water for years and years, what do you think may happen?
Wear it away; water may freeze and crack the stone; pieces may fall off

Go soft; moss grow on it; break down

4. Can you think of other reasons why it is useful for building materials to be waterproof i.e. do not absorb water? Keep the building waterproof, warm … many other reasons

5. Can you find a picture of metal and a picture of stone in buildings that have been weathered by water?

**Evaluation** – THINKING about your experiment

1. Was your prediction correct? _____

2. This was a 'fair test' because:

   a) The one difference between the experiments was the TYPE of building material.
   b) The factor we kept the same was size of the piece of material, time left 60 minutes

3. How did you keep safe? Mop up any water we spilled. Washed hands

4. How could you make your results more accurate? Use a balance to measure the mass of the materials.

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# Rot Or Repair KS1
## Swadlincote Building Survey
## Pupil Worksheet

LOTTERY FUNDED

Look at the shops in Swadlincote High Street.

Which material is broken or rotting?

What could you do to stop this happening?

| Material | Is it broken or rotten ? | Why do you think this has happened ? | How could you stop this ?  |
|---|---|---|---|
| Metal   | | | |
| Plastic  | | | |
| Wood  | | | |
| Brick  | | | |
| Stone  | | | |
| Add the names of other materials you can see. | | | |
| | | | |
| | | | |

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# Rot Or Repair KS1
## Swadlincote Building Survey
## ANSWERS

Look at the shops in Swadlincote High Street.

Which material is broken or rotting?

What could you do to stop this happening?

| Material | Is it broken or rotten? | Why do you think this has happened? | How could you stop this?  |
|---|---|---|---|
| Metal   | Yes | Rain makes it rusty. Acid rain. Animal damage | Galvanised metal. Aluminium Paint it. Wash it. |
| Plastic  | Yes | Heat makes it brittle. | It is difficult to stop this happening. |
| Wood  | Yes | Heat. Water. Acid rain. Plants growing in between them. Animal damage | Paint or stain it. Wash it. |
| Brick  | Yes. | Heat. Wind. Rain. Acid rain. Plant growing in between them. Animal damage | Wash them. |
| Stone  | Yes. | Heat. Wind. Rain. Acid rain. Plants growing in between them. Animal damage | Wash them. |
| Add the names of other materials you can see. | | | |
| | | | |
| | | | |

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# Rot Or Repair (Quick Building Survey)
## KS1 & KS2 Pupil Survey
## of the High Street & The Delph

SWADLINCOTE TOWNSCAPE HERITAGE SCHEME

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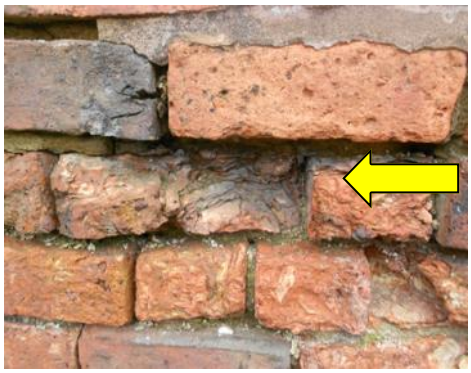
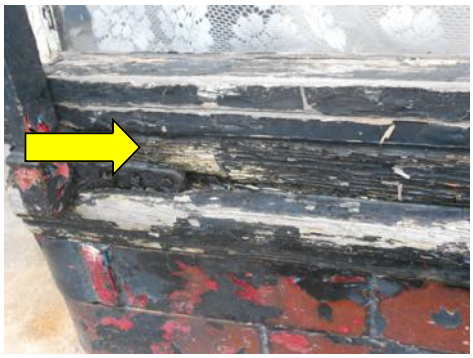
Here are some examples of damage to building materials.





Damage can be caused by water, wind and pigeon droppings.

Materials at risk are wood, metal, stone brick and clay

### Your Task:

Look at the buildings around The Delph and High Street

Name 3 types of damage and name the material damaged.

How could you stop this damage?

**Something extra**

1. Pick 5 buildings. Count the pigeons on them.
Are there more on some buildings?
Why?

2. Can you find more examples of damage to other materials?

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# Rot Or Repair (Quick Building Survey)
## KS1 & KS2 Pupil Survey
## of the High Street & The Delph

Results of …… (your name)

| Damage | Material |
|---|---|
| | |
| | |
| | |
| Extra : | |
| | |
| | |
| | |

I could protect the buildings by

……

……

| Building |  |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

More on buildings ……

……

because ……

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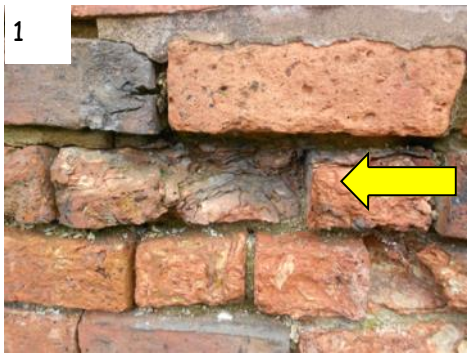
# Rot Or Repair (Quick Building Survey)

## KS1 & KS2 Pupil Survey of the High Street & The Delph

**ANSWERS**

Here are some examples of damage to building materials.

1



2

3

4

Damage done by water, wind and pigeon droppings.

Materials at risk are wood, metal, stone brick and clay.

### Your Task:

Look at the buildings around the Delph / High St.

Name 3 types of damage and name the material damaged.

How could you stop this damage?

**Something extra:**

1. Pick 5 buildings. Count the pigeons on them.
Are there more on some buildings?
Why?

2. Can you find more examples of damage to other materials?

5

6

7

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# Rot Or Repair (Quick Building Survey)

## KS1 & KS2 Pupil Survey of the High Street & The Delph

## ANSWERS

Results of Sample Answer (your name)

| Damage | Material |
|---|---|
| 1. Rainwater, frost, acid rain, temperature change, rubbing | Brick, mortar |
| 2. Heat, rainwater, acid rain, animals, plants, rubbing | Wood, paint |
| 3. Heat, acid rain, animals | Paint |
| Extra : 4. Rainwater, frost, heat, wind, acid rain, animals, plants | Wood, plastic, tile mortar |
| 5. Animals—pigeon droppings. Plants—moss. Rainwater | Brick, mortar, metal |
| 6 Rainwater, acid rain, heat, animals | Wood |
| 7 Plants—Buddleia | Mortar |

I could protect the buildings by:

regular maintenance (repainting, repointing, clearing gutters of moss etc.)
using materials that can withstand weathering e.g. Aluminium, UPVC

| Building |  |
|---|---|
| 1 Boots | 3 |
| 2 William Hill | 1 |
| 3 HSBC | 0 |
| 4 Superdrug | 4 |
| 5 Foresters | 4 |

Less on buildings 2 and 3

because the pigeon spikes stop the pigeons landing and leaving droppings.

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# Rot Or Repair Game
# How Good Is Your Building?
# KS 1&2 Teacher Notes (1)

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## Preparation:

- Find a suitable place to play on the Delph.
- Draw 3 parallel lines in chalk across the floor approximately 10m apart.
- Line the group up on the middle line facing you and in groups of three or four with their arms loosely linked.
- Pupils imagine they are each a shop on the High Street.

## Safety:

- Ask pupils to be aware of people around them and to move if necessary.
- Do not pull or push one another too hard.

## Introduction:

They are going to play a game to see how change can affect the building they have chosen for good or bad.

- The middle line is their current state of repair – open for business and reasonably safe. A positive change moves forwards, negative moves backwards. If you go as far back as the last line, your building has fallen apart and MAY be demolished. You could make a lot of collapsing noise at this point.
- Pupils belonging to buildings which get demolished can become 'Town Centre Managers' and help you to survey the other buildings (pupils) to make sure they are moving the correct amount of spaces.
- If you go forwards to the 1st line, your building has won an award for good maintenance. Congratulations! You can all cheer.
- The pupils have linked arms in groups of three or four to show that each building is linked to its neighbours. Directions will apply to some buildings and not others. You cannot break the link so if you have to follow a direction but your neighbours don't, they will pull you back and you can also try and pull them.

You will agree a finish point before the next instruction is given..

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SWADLINCOTE TOWNSCAPE HERITAGE SCHEME
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## Practice:

- In this game the pupils can move forwards or backwards in toe-to-heel steps (carefully!).

Practice this! The instructions **will not apply to all** the buildings/ shops. To decide which pupils (shops) move you can ask those with brown shoes, black shoes, long hair… etc.

## The Game:

Line up on the middle line in your groups of three or four.

Think of your shop.

- Grass is allowed to grow in your guttering MOVE BACKWARDS 2 SPACES.
- Your brickwork starts to crumble from a very long period of weathering (effects of wind and rain). MOVE BACKWARDS 1 SPACE..
- Your wooden window sills are replaced as the old were damaged and rotten. MOVE FORWARDS 2 SPACES.
- Someone clears the grass and debris from your guttering MOVE FORWARDS 2 SPACES.
- High winds overnight catch the edge of some tiles and a small hole appears in your roof MOVE BACKWARDS 2 SPACES.
- After a period of time, no one fixes your damaged roof and the hole becomes much larger MOVE BACKWARDS 5 SPACES.
- Pigeons nest in your roof and their poo damages the decorative band of terracotta in the brickwork, this damages the appearance and is very expensive to replace MOVE BACKWARDS 2 SPACES.
- The hole in your roof is fixed and re-tiled. MOVE FORWARDS 5 SPACES.
- Pigeon spikes are introduced to stop the pigeons landing on your building. While they stop the pigeons from coming onto your building, the locals think they look ugly. STAY WHERE YOU ARE.
- The store owner has your woodwork sanded down and repainted MOVE FORWARDS 2 SPACES.
- Your building has a new coat of paint. MOVE FORWARDS 2 SPACES.
- When painting, the workmen painted over an original feature (mosaic floor tiles or glazed stall riser bricks). While this doesn't make your building worse, the customers comment on the feature that they all miss. STAY WHERE YOU ARE.

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- A hard winter means lots of ice gets into the fronts of the bricks and the mortar between them and pieces start to fall off. MOVE BACKWARDS 2 SPACES.
- Shops which are getting lots of customers can afford to repair bricks and mortaring. MOVE FORWARDS 2 SPACES.
- A sparrow hawk in towns eats quite a few pigeons over the winter. STAY WHERE YOU ARE. (While the number of pigeons is reduced, this does not repair the damage already being done.)
- Cracks appear on paintwork to shops on the south facing side of the street. MOVE BACKWARDS 2 SPACES.
- A long wet summer followed by an even wetter winter creates damage and damp patches to the side of your buildings. MOVE BACKWARDS 3 SPACES. THOSE ON THE END OF THE STREET GET FLOODED MOVE BACKWARDS 5 SPACES.

Make up some more if you need to!

## When you need to finish the activity:

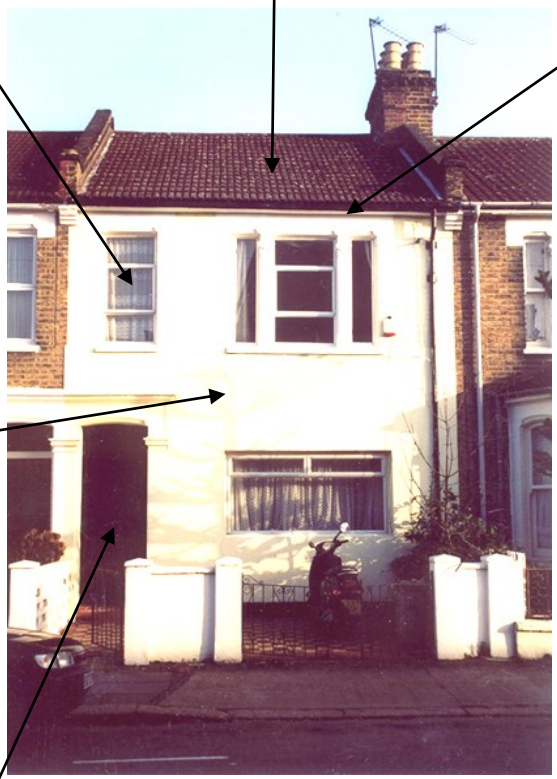
- Ask the Town Centre Managers to choose, with reasons, 3 buildings which can receive a grant which helps to restore and repair old buildings.
  Should they be:
- the buildings nearest the first line as they were in good repair?
  or
- the buildings nearest the last line that could be demolished?

# Rot or Repair

## The Right Material For The Right Part

## KS1

## (page 1)



# Rot or Repair

## The Right Material For The Right Part

## KS1

## (page 2)

Write your answer on the house sheet.

1. **Name the parts of the house in a green pen.**

roof door wall gutter window

Can you add any more names?

2. **Name the material it is made of in a red pen.**

metal plastic wood stone clay brick

Can you name any more materials?

3. **Name why that material was used in a blue pen.**

hard/soft stretchy/stiff shiny/dull

rough/smooth bendy/not bendy cloudy/see through

Can you think of any other reasons?

**Some more key words:**

drainpipe drive chimney pillar gate

UPVC concrete paint glass slate

keeps water out lets water in

soaks up a liquid does not soak up a liquid

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# What Have You Learnt ?

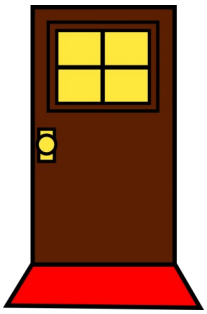
## Windows are made of:

metal
plastic
wood

brick
clay
stone

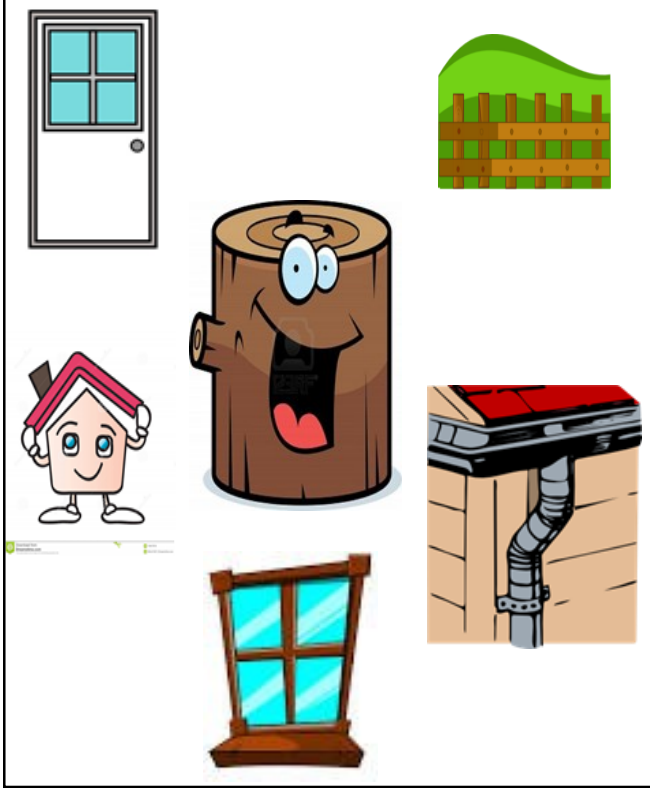
## Doors are made of:

stone
brick
clay



metal
plastic
wood

## Wood is used to make:



## Plastic is used to make:

## Circle the materials that get damaged.

wood  brick  glass  paint

clay  metal  plastic

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# Word Map For Building Materials

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UPVC

glass

paint

concrete

slate

metal

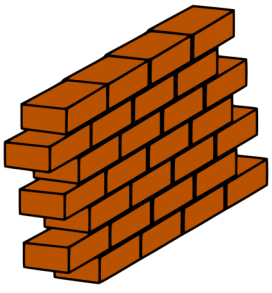

stone

wood

plastic

clay

brick



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# Word Map For House Parts

drainpipe

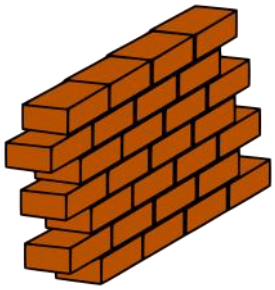
chimney

pillar

gate

drive

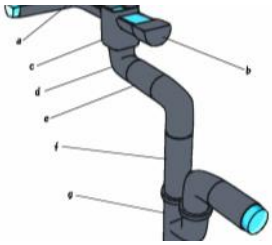
wall



roof

door

gutter



window

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# Word Map For Properties

soluble

insoluble

flexible

inflexible

opaque

transparent

absorbent

conducts electricity

hard

soft

shiny

dull

dissolves

not dissolves

stiff

stretchy

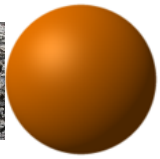
soaks up water

not bendy

bendy

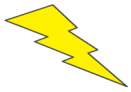
rough

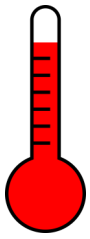
smooth



cloudy

see through





waterproof

lets water through

carries electricity and heat

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# Rot or Repair Glossary

**PROPERTIES.**

**Metals** – strong/ hard/ shiny

**Plastics** – waterproof, can be heated into any shape, can be strong, dyed different colours or made transparent.

**Glass** - normally **transparent** and can be made into many different shapes. Thick glass can be strong, but thin glass will break very easily. It's not very expensive to make, easy to shape when it's heated up to a liquid, reasonably resistant to heat when it's cooled and dried hard. It can be recycled any number of times.

**Wood** – strong and long-lasting

**Fabrics** – made out of different materials and can be **stretchy** (a pair of tights), **insulating** (keep you warm, like a woollen coat) or **absorbent** (a towel).

**Concrete** – made with cement, sand and crushed rock – very strong.

**Ceramics** - E.g. clay tiles. They can be long lasting strong and heat resistant. They can also be brittle but can withstand the damaging effects from acid and oxygen in the air. They can also be waterproof.

**Paint** – used to decorate, add colour to a surface but also a layer of protection. You can use special paints to make metal waterproof and stop it rusting or special paint for treating wood to stop water making it rot.

**WEATHERING.**
(Adapted from www.nationalgeographic.org)

This is the process of rocks crumbling due to rain, wind, or other atmospheric conditions. Also called physical weathering.

Or

The breaking down or dissolving of rocks and minerals on Earth's surface. Water, ice, acids, salt, plants, animals, and changes in temperature are all agents of weathering.
Once the rock has been broken down, a process called erosion transports the bits of rock and minerals away. No rock on Earth's surface is hard enough to resist weathering. Together, the processes of weathering and erosion carved the Grand Canyon. Weathering and erosion constantly change the Earth. Weathering wears away exposed surfaces over time. It smooths the sharp, rough areas on rocks. Weathering also helps create soil as tiny bits of weathered rock mix with plant and animal remains.

## Mechanical / Physical Weathering

**Freeze-thaw**. Water seeps into cracks and crevices in rock. If the temperature drops low enough, the water will freeze. When water freezes it expands. The ice then works as a wedge. It slowly widens the cracks and splits the rock. When ice melts, water performs the act of erosion by carrying away the tiny rock fragments lost in the split.

**Heat**. Rock can heat up and cool down. The changes in temperature cause the rock to expand and contract. As this happens over and over again, the rock weakens and 'peels'. Over time, it crumbles.

**Water**. When clay or other materials near hard rock absorb water, the clay swells with the water, breaking apart the surrounding rock.

**Salt Water**. This sometimes gets into the cracks and pores of rock. If the saltwater evaporates, salt crystals are left behind. As the crystals grow they put pressure on the rock, slowly breaking it apart.

**Plants**. The seed of a tree may sprout in soil that has collected in a cracked rock. As the roots grow they widen the cracks, eventually breaking the rock into pieces. Over time, trees can break apart even large rocks. Even small plants, such as mosses, can enlarge tiny cracks as they grow.

**Animals**. Animals, such as moles and prairie dogs, tunnel underground and also work to break apart rock and soil. Other animals dig and trample rock above ground, causing rock to slowly crumble.

## Chemical Weathering

Chemical weathering changes the materials that make up rocks and soil. Sometimes, carbon dioxide from the air or soil combines with water. This produces a weak acid, called carbonic acid that can dissolve rock.
Carbonic acid is especially effective at dissolving limestone. When the carbonic acid seeps through limestone underground, it can open up huge cracks or hollow out vast networks of caves.

Another type of chemical weathering works on rocks that contain iron. These rocks rust in a process called oxidation. As the rust expands, it weakens the rock and helps break it apart.
The chemicals in urine and faeces can also weaken rock.

## People and Weathering

Weathering is a natural process, but human activities can speed it up. For example, certain kinds of air pollution increase the rate of weathering. Burning coal, natural gas, and oil releases chemicals such as nitrogen oxide and sulfur dioxide into the atmosphere. When these chemicals combine with sunlight and moisture, they change into acids. They then fall back to Earth as acid rain. Acid rain rapidly weathers limestone, marble, and other kinds of stone. The effects of acid rain can be seen on gravestones. Names and other inscriptions can be impossible to read.