

# Mosaics



*An Illustrated eBook for Beginners*

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**Getting Started in Mosaics · Mosaic Materials · Mosaic Table Top ·  
Mosaic Frame · Mosaic Birdbath · Mosaic Flowerpot · Tips**

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Compiled & Designed by Tabula Rasa i-Publishing, Co

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Mosaic01: P1

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## Table of Contents

|   |           |
|---|-----------|
| <b>Getting Started in Mosaics .....</b> | <b>3</b>  |
| <b>Mosaic Materials .....</b>           | <b>5</b>  |
| <b>Mosaic Table Top.....</b>            | <b>7</b>  |
| <b>Mosaic Frame.....</b>                | <b>12</b> |
| <b>Mosaic Birdbath .....</b>            | <b>13</b> |
| <b>Mosaic Flowerpot.....</b>            | <b>16</b> |
| <b>Tips.....</b>                        | <b>18</b> |

## Getting Started in Mosaics

The mosaic technique is not difficult to master, and it requires only a few basic tools and materials. Mosaics can be purely decorative or entirely functional works of art. They are created by piecing together small tiles, stones, broken crockery or pottery to create a design.

### Setting up the studio

Whether you have a small studio or are intending to work on the kitchen table, you need to make some plans and preparations before you start work. Consider



the size of the area you are working in and the scale of the project you are intending to tackle.

If you don't have a studio, organize space on a shelf or in a cupboard to store your equipment. Mosaic work can be messy, so cover the table and floor with plastic, old sheets, or anything that can be discarded or washed. Small shards

of tiles can be vacuumed up, but when grout dries on carpet or wooden floors it is difficult to remove.

Make sure you have easy access to water. When grouting and cleaning the mosaic, you will need frequent changes of water. If working indoors, make sure you have plenty of light and fresh air. Find a comfortable chair and work at a steady, leisurely pace.

### Tools and equipment

There are no set rules as to what tools you should use, but most of what you need can be found in hardware stores and tile suppliers, or look around the home for items that may be useful.

#### ❖ Tile nippers

There are several methods of cutting tiles but the easiest is to use a pair of tile nippers. Tile nippers are the most versatile tool in a mosaicist's tool kit and are the only major investment you will need to make. Tile nippers

are available in various sizes and usually differ in quality and price. Tungsten carbide-tipped nippers are a worthwhile investment. Make sure the handles are spring-actioned and try them out first by holding them in your hand to see if they feel comfortable.

❖ **Rubber squeegee**

A rubber squeegee is used to spread the grout into the gaps between the tesserae and to wipe off the excess grout. If you don't want to purchase a rubber squeegee, spread the grout with a trowel or palette knife or, wearing rubber gloves, use your hands to spread the grout over the surface, pushing it into all the cracks.

❖ **Palette knife or trowel**

Use a palette knife to spread the tile adhesive directly on the surface or on the back of individual tesserae. A trowel is useful when working on large areas.

❖ **Sponges and rags**

These are used to wipe off excess grout from the surface of the mosaic and to polish the finished mosaic.

❖ **Containers**

Save plastic or ice-cream containers and use them for mixing adhesive and grout. Use glass jars or plastic containers to store your tesserae and other mosaic odds and ends.

❖ **Miscellaneous**

For drawing designs you'll need paper, ruler and a pencil. If you are choosing your own color scheme, colored pencils or watercolors are useful. Transfer designs onto the surface using carbon paper and a stylus (or blunt pencil). Carbon paper is available in sheets and one side is coated in carbon. It is usually black or blue, but buy white if you want to transfer a design onto a dark surface. A felt-tipped pen is useful for outlining penciled designs for better visibility, and for marking on tiles. Use a compass for drawing circles and a protractor for measuring angles.

## **Safety**

When working with mosaics you will need rubber gloves, protection for your eyes and a dust mask or respirator. When cutting tiles, even if you only need to cut one or two, always protect your eyes with goggles or glasses. As tiles have a tendency to shatter, wear goggles and cut the tiles at arms' length to prevent small shards flying up into your face. When cutting tiles, wear a mask to prevent inhalation of dust or glass particles.

Wear rubber gloves when working with cement or grout, and wear a dust mask when polishing off dry grout or when using solvents.

## **Mosaic Materials**

### **Tesserae**

Glass mosaic tesserae are small squares of colored glass, usually smooth on the front and slightly ridged on the back, which aids adhesion. They are often used in swimming pools and bathroom floors and walls. They can be used whole for borders and are easily cut and shaped with tile nippers for more intricate designs. Widely available in a large range of colors and styles, prices range according to color, quality and supplier. It is usual to buy them in sheets.

Ceramic tiles range from colorful to plain, bright, hand-painted designs, many different shapes and sizes. They are ideal for covering large areas quickly.

Ceramic tiles can be both glazed and unglazed. Unglazed tiles are well suited to designs that have a natural, earthy color, but they can also be used to provide contrast within a highly colorful, 'glossy' mosaic. Look out for discontinued lines. Tiles that are a little too bright or old-fashioned once cut into tesserae and used in small areas take on a whole new life.

Unusual and colorful old china cups and plates add interest and detail, and provide a contrast with plainer tiles. Raised patterns, or even the handles from tea cups or coffee mugs, give it a three-dimensional effect. Second-hand shops or garage sales are great places to start. And ask friends and family to save their broken plates or cups. Pebbles and stones can look very effective in a mosaic, Collect them from the beach or river bank and try to select ones that are similar

in size. Marble, slate and granite are also suitable stones for mosaic work.

Colored glass, mirror, glass beads and pieces of terracotta pots.

**Hint:** Take care when you buy your tiles that they are all of the same thickness. For many projects this is not a problem, but if a uniform, flat finish is required (e.g. a table top), it can be difficult to achieve.

## **Bases**

There are many suitable surfaces but make sure you choose a base according to where you are planning to use it. A high-grade plywood or medium density fiberboard (MDF) are suitable as they are strong and warp-resistant. If the wood is likely to come into contact with water, seal it to prevent moisture entering the wood, causing the adhesive to fail and the wood to warp. Some mosaicists prefer to seal all wood before use. Where the mosaic is likely to come into contact with constant damp or wet, such as in the bathroom or behind the kitchen sink, a waterproof base, such as fiber cement sheet, is needed. Ask your supplier to cut it to size. If working on a previously painted surface, sand the surface lightly before use. This provides a 'tooth' for the adhesive. Porous surfaces, such as terracotta, should be sealed before use.

## **Adhesives**

A quality adhesive is essential to any mosaic work. There are many types to choose from and new products are launched frequently, but there is no strict rule as to what you should use. If in doubt, talk with your hardware or tile supplier to ensure you make a suitable choice. Adhesives are broken into two main groups: latex-based multipurpose and cement-based adhesives.

- ❖ Multi-purpose tile adhesive is a two-part adhesive designed to withstand movement and provides great strength. It bonds exceptionally well, is easy to work, and is suitable for many mosaic applications. When cured, the adhesive is completely unaffected by water. It is purchased in two parts: a liquid and a rubbery powder. Mix the two parts together just before use, following the manufacturer's instructions. This adhesive is usually sold in



bulk quantities, mainly for commercial use, but there are some water-resistant adhesives that are sold in pre-mixed tubs, which is ideal for small jobs.

- ❖ Cement-based tile adhesive is waterproof, long-lasting and bonds very well with the porous surfaces of terracotta and cement (this is the adhesive used for swimming pools). As these surfaces are in frequent, if not constant, contact with water, a high grade cement-based adhesive, such as this, should be used.

Wallpaper paste is used to temporarily bond tesserae to craft.

### **Grout**

Grout is the paste used to fill the gaps, or interstices, between tesserae. It strengthens the mosaic and gives the surface a less jagged finish. Grout is commonly sold as white or grey, but a reasonably extensive range of colored grouts is available at most hardware stores.

Take your time when choosing a grout color as this is essential to complement the finished design. As a general guide:

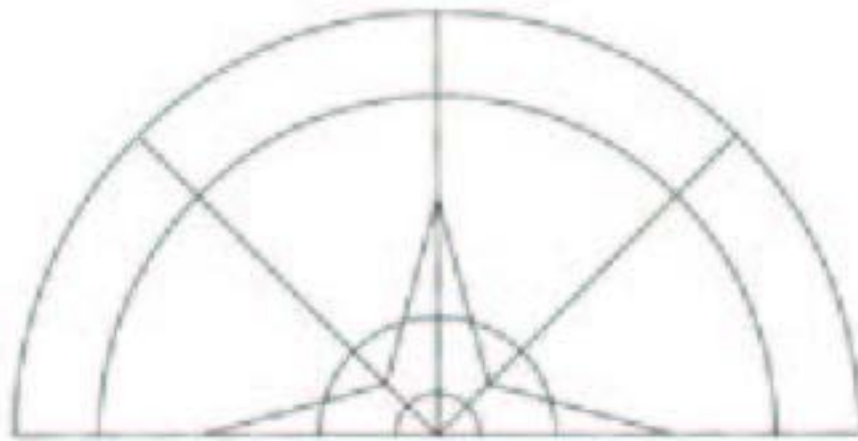
- ❖ If you want a bold, well-defined mosaic, choose a grout color dissimilar to any of the tesserae. This will bring out strong contrasts within the design.
- ❖ For a softer, unified design, aim for a grout in a similar tonal range to the mosaic elements.
- ❖ When you're not sure what color grout to use, grey is always a safe, neutral option. Plain cement can also be used as a grouting medium.

## **Mosaic Table Top**



Our table top was cut from a large piece of plywood (you can cut your own with a router), and the wrought-iron base and legs were especially made by a blacksmith.

Using a photocopier, enlarge the image below by 666% (enlarge by 200%, then 200%, and then by 167%). Reverse the pattern for the other half of the table.



### You'll need:

- ❖ Circle of 20mm thick plywood, 1000mm in diameter (if an outside table, high-grade waterproof plywood)
- ❖ Exterior water-based sealer
- ❖ Large ceramic tiles in red, dark green, orange, lemon-green, light green, cream, and mustard.
- ❖ Ceramic tiles in a mix of patterns for border

### Tools

- |                               |                            |
|-------------------------------|----------------------------|
| ❖ Tracing Paper (optional)    | ❖ Goggles and mask         |
| ❖ Carbon paper (optional)     | ❖ Tile nippers             |
| ❖ Multi-purpose tile adhesive | ❖ Mixing containers        |
| ❖ Black grout                 | ❖ Palette knife            |
| ❖ Brush, pencil, ruler        | ❖ Rubber gloves, squeegee, |
| ❖ Protractor, compass, stylus | ❖ Rags and cloths, sponges |
| (optional)                    |                            |

### Here's how:

#### Preparation

1. You may already have a readymade table with a glass or wooden top that you can use. Remove the original top and insert the piece of plywood in its place. Otherwise, take the wood to a blacksmith and ask for a 25mm wide metal band to be made to support the table top. You'll also need 12 small nail holes



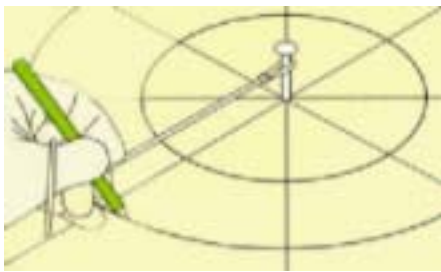
to be drilled in the center of the band, spacing them 260mm apart (the plywood is held in place with nails). If required, decide on the design of legs for your table.

2. If the table is intended for outdoor use, waterproof the wood using a water-based sealer. Allow it to dry.

### **Drawing the design**



3. Following figure 1, draw the basic design for the table. Alternatively, print out the template and use a photocopier to enlarge the pattern. Using carbon paper and the stylus, transfer the design to your table.



4. If you are using the diagram to draw the design, first locate the exact center of the plywood circle and mark it with a pencil. Draw a line through this point from one side to the other.

### **Drawing circles**

If you don't have a compass, you can improvise by using a piece of string, a pencil and a nail.

5. Insert a nail into the center of the board and tie a piece of string to it.
6. Measure out the string to the length required and tie a loop in the other end. Slip the loop over the pencil.
7. Holding the string taut, draw a circle around the board. Adjust the length of

- string to draw circles of different sizes.
8. Divide the table into eight even 'pie' sections. To do this, place the protractor on the pencil line and mark off three angles of 45 degrees. Place the protractor on the opposite side and do the same. Rule up the lines following the marked points.
  9. Using a compass, draw three circles on the table, using the measurements given on figure I. If you don't have a compass, use the string and pencil method (See Drawing Circles). Draw a star in the center of the table. Make sure the lines are visible; if you have used pencil, you may want to go over them in felt-tip pen.
  10. When working on a large table such as this, it is difficult to prepare all the tiles in advance. Wearing goggles, cut enough tiles to complete one area of the table; you can cut more tiles as you need them.
  11. Starting in the center of the table, fill the inner circle with red tesserae cut into eight wedges. Spread the adhesive onto the table with a palette knife and fix the tesserae in place. Surround the wedges with a row of thin, rectangular red tesserae.



12. Using thin, rectangular tesserae, follow the pencilled design to establish outlines for all the geometric elements. Use dark green for the outer circle, orange for the middle circle (note that the orange circle is interrupted by the green star and the red radiating lines) and lemon-green for the inner circle. Use red for the eight radiating lines and light green to outline the star. Without using adhesive, position all the cut tesserae on the table to ensure they will fit your pattern. When you are happy with their placement, apply adhesive to their backs and fix them to the table, working on a section at a time.



13. Using irregularly shaped cream tesserae, fill in the eight large segments between the outer and middle circle. Apply the adhesive directly to the table's surface, working on small areas at a time, and fix the tesserae in place.
14. Fill the small areas between the middle orange circle and the star with mustard tesserae. Use a mixture of wedge and large rectangular dark green tesserae to complete the star.



15. Fill in around the border using a combination of tesserae, plain and patterned, to complete the design.
16. Allow 24 hours for the adhesive to dry before grouting the table. Black grout is used to contrast with the brightly colored design.
17. Wearing rubber gloves and using the rubber squeegee, apply liberal amounts of the grout over the surface. Use your hands to push the grout into any cracks that you may have missed. Wipe off the excess grout with the squeegee or with a cloth or rag and allow the mosaic to stand for 5-10 minutes.
18. Wipe off the excess grout with a damp sponge, rinsing the sponge as you work. You will need to go over the surface several times to ensure all the grout is removed. This may take several changes of water.
19. Once the mosaic is dry, a light film of grout residue will appear. Use a combination of slightly damp and clean, dry rags to polish the table.

## Mosaic Frame



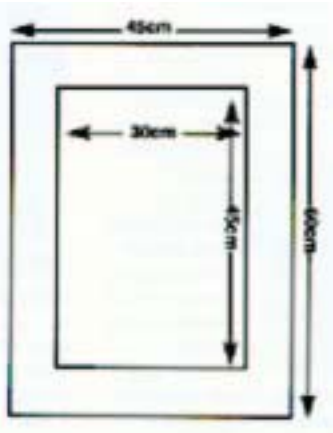
Fiona Connolly made this impressive frame way back in 1995. It's still one of our most requested projects and that's because it's so easy to make!

### You'll need:

- ❖ 45 x 60cm piece of 6mm plywood
- ❖ 4m of 8mm timber beading
- ❖ Saw
- ❖ Small nails
- ❖ Hammer
- ❖ Sandpaper
- ❖ Acrylic undercoat
- ❖ Dark green acrylic paint
- ❖ Paintbrush
- ❖ Broken tiles and crockery
- ❖ Grout
- ❖ Semi-gloss spray varnish

### Here's how

1. Using the saw, cut a 30 x 45cm window in the plywood base.



2. For the outer casing, cut the beading into two 60cm and two 43.4cm pieces. For the inner casing, cut two 45cm and two 31.6cm pieces.
3. Nail the 60cm pieces to the top of the long outside edges and the 43.4cm pieces to the short outside edges of the frame.
4. Nail the 45cm pieces to the top of the long inside edges and the 31.6cm pieces to the short inside edges of the frame.

5. Sand lightly and undercoat the beading strips and the back of the frame only. When dry apply two to three coats of dark green paint over the undercoat, allowing to dry completely before applying the next coat.
6. Mix the grout, according to directions, to a thick consistency resembling peanut butter and fill the frame front about five-eighths full with grout.
7. Place the broken tiles in the grout as desired. Fill in around the tiles with grout as needed and then wipe off any excess with a damp cloth. Allow to dry for two to four days.

## Mosaic Birdbath



Attempt this large project in two or three sittings.

The actual design is quite simple but what really makes this birdbath so effective is the use of bright colors and the varying angles at which the tesserae are laid.

**You'll need:**

### Tools

- ❖ Brush for sealer
- ❖ Pencil
- ❖ Compass
- ❖ Stylus (optional)
- ❖ Tile nippers
- ❖ Goggles and mask
- ❖ Mixing containers
- ❖ Palette knife
- ❖ Rubber gloves
- ❖ Rubber squeegee
- ❖ Rags or cloths
- ❖ Sponges

### Materials

1. Concrete birdbath, dish and stand in separate pieces
2. Waterproof sealer for concrete
3. Cement-based tile adhesive
4. Old china or crockery: assorted patterns
5. Glass mosaic tesserae: yellow, purple, red, light blue, bronze, turquoise, dark blue
6. Black grout

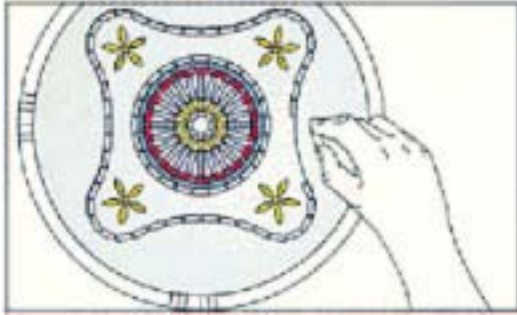
## **Preparation**

1. Seal all the sides of the dish and the stand with concrete waterproofing sealer and allow it to dry.
2. As the design for the birdbath contains little detail, design directly onto the birdbath. Start by locating the center of the birdbath and draw three circles approximately 20 mm, 30 mm and 65 mm in diameter. You can use a compass to do this or a string and pencil. Add in some large floral shapes around the outer circle, and small flower shapes in each of the corners. Add some detail around the rim. No need to draw a pattern for the stand - just work the design to suit the shape. Fill in with turquoise. The outside rim is tiled with purple. Allow to dry before turning it face up.

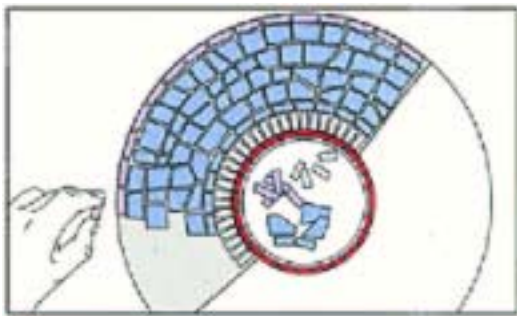
## **Tiling the dish**

3. Start working in the center of the birdbath. Using tile nippers, cut a small circle from the patterned china. Fix it in the center using adhesive. Surround this with a border of china tesserae to complete the first circle.
4. Add a row of yellow to complete the second circle.
5. Cut the purple tesserae into thin rectangular shapes and lay them around the yellow circle, radiating outwards. Surround this with a border of red and then light blue to complete the third circle. of each flower. For each flower, cut five petal shapes from the bronze tesserae. Butter the back of the tesserae with adhesive and fix in place.
6. Cut four small circles from the crockery and fix them in the center of each flower.
7. Define the large floral shape by outlining it with thin rectangles of turquoise. Fill inside this area with random shapes of turquoise and outline with a row of yellow.





8. Place a row of thin rectangles of dark blue around the yellow. Fill in the remaining area on the dish using randomly shaped blue tesserae.
9. Stick a row of whole blue tesserae around the inside rim. Apply the adhesive with a palette knife and allow it to dry for 10 minutes so the adhesive becomes slightly tacky. If it is wet, the tesserae will slide down the side. Position the uncut edge of the tesserae uppermost to make the finish neater. Allow the adhesive to set.
10. Turn the dish over and tile the back. Starting in the center, stick a row of thin, red tesserae around the dish, followed by a row of light blue. Fill in with turquoise. The outside rim is tiled with purple. Allow to dry before turning face up to dry.



11. Tile the top of the rim. Start with the four detailed areas. Cut four small squares from crockery and fix them in place. Border these with red, then yellow tesserae cut into thin rectangles. Fill in around the rim with light blue tesserae.

### **Tiling the stand**

12. Cut the flowers from pieces of china and stick them randomly around the main section of the stand. Fill in around the flowers using dark blue. Tile the rest of the stand adjusting the pattern slightly, depending on the size and

shape of your stand. Don't forget to mosaic the back of the dish! Choose two or three colors and fix them in bands around the dish.

### **Finishing**

13. Allow 24 hours for the adhesive to dry. Wearing gloves, spread the black grout over the surface of the birdbath. Wipe off the excess with a rag. Allow the grout to dry; turn the dish over and repeat the process to grout the back. While the dish is drying, grout the stand. Once dry, give the birdbath a final polish with a rag to remove any grout residue. Allow at least 72 hours for curing before using the birdbath.

## **Mosaic Flowerpot**



This plant pot uses an assortment of pebbles and earth-colored tesserae to give it a rustic character. Allow yourself plenty of time to complete this project, as each side of the pot must be completed and dry before beginning on the next.

### **You'll need:**

#### **Tools**

- ❖ Brush, palette knife
- ❖ Goggles and mask
- ❖ Tile nippers
- ❖ Old towel, rubber gloves, rags or cloths, sponges
- ❖ Mixing containers

#### **Materials**

- ❖ Terracotta pot (square or hexagonal)
- ❖ Water-based sealer
- ❖ 25 x 25mm ceramic tiles in earth colors: brown, black, light grey, yellow, beige
- ❖ Small terracotta pot (smashed to make tesserae)
- ❖ Pebbles (Larger pebbles, in a variety of colors, are used around the top of the pot and smaller ones, all brown, are used down the sides of the pot.)
- ❖ Cement-based tile adhesive
- ❖ Terracotta-colored grout

### **Here's how**

1. Seal all surfaces of the pot using a water-based sealer. Ensure the interior of the pot is well sealed: the sealer prevents the moisture seeping through the porous terracotta and weakening the adhesion of the tesserae around the outside of the pot. Allow the sealer to dry.
2. Wearing goggles to protect your eyes and a mask to prevent inhalation of dust particles, prepare enough ceramic tiles to complete at least one side of the pot. The mosaic design for this pot is made up of small squares and thin rectangular tesserae. Smash the terracotta pot and cut it into long, thin rectangles.

### **Fixing the tesserae**

3. Place an old towel on the work surface and lie the pot on its side. Using the palette knife and the cement-based tile adhesive, apply the adhesive in a thin strip along one side of the pot, just under the rim. This type of adhesive is waterproof and bonds well with the porous surfaces of terracotta.
4. Fix a single row of larger pebbles around the top of the pot, pushing them into the adhesive. Use pebbles that are similar in size to create a uniform effect.
5. Remembering to work on one side at a time, spread adhesive along the rim of the pot. Fix a row of brown tesserae to the pot. Similarly, stick a row of thin, rectangular brown tesserae below the pebbles.
6. Starting from the middle of one side, fix a vertical row of small square black tesserae to the pot. On either side of this, fix a row of smaller brown pebbles. If possible, try to use pebbles that are similar in size and shape. Leave enough room at the bottom of the pot for a row of thin brown tesserae.
7. Moving in an outward direction, fix a single row of light grey tesserae on either side of the small pebbles, following the photograph at the top as a guide.
8. Fix two vertical rows of long, thin pieces of terracotta to create a border around the yellow.
9. Continue laying vertical rows of tesserae in this manner until one side of the pot is completed. The size and shape of your pot will determine how many rows of tesserae are needed to complete the mosaic work. If your pot is larger

than the one used here, you may want to add in extra rows using different colored tesserae, or continue to repeat the rows of colors until the side is completed.

10. To complete the design for this side, fix a row of small square-shaped tesserae around the base.
11. Allow the adhesive to dry for about two hours. Turn the pot onto the next side and repeat this process to finish all the sides.
12. To finish laying the tesserae, stand the pot upright and tile around the top of the rim. Use brown tesserae cut into large rectangles and stick them around the top. To fill in the gaps in the corners, cut the brown tesserae into triangular or wedge-shaped pieces and stick them in the corners.

### **Finishing**

13. Allow 24 hours for the adhesive to dry and then grout. This pot uses a terracotta-colored grout to complement the earthy elements of the pot. As the pot has an uneven surface it is easiest to apply the grout with your hands. Wearing rubber gloves, spread the grout over the surface, pushing it around the pebbles and other mosaic pieces. Wipe off the excess grout with a rag and let it stand for 5-10 minutes.
14. Use a sponge to wipe away the residual grout, rinsing the sponge out in water as you work. You will need to go over the surface several times to clean off the grout. Allow to dry for 24 hours.
15. When the mosaic is completely dry, a light film of grout will be left on the surface - polish it off with a clean, dry rag.

### **Tips**

To allow the mosaic to cure properly, it is best to cover it with a damp cloth and allow it to stand for at least three days before using it.

Clean up your grouting tools soon after you have finished using them. The wet grout washes off easily in water, but once hardened it is difficult to remove.

If your bucket of water has grout residue in it, never throw the water down the sink as the sand and cement will clog up the drain.

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