

## Activity Instructions - Used Paper

### Part I - Collecting and Soaking

The following items will be needed for this part:

- various types of paper (for example, newspaper, construction paper)
- bowl
- water

#### Step 1

Collect various types of paper and tear them into small pieces about the size of a postage stamp. If using different types of paper, keep them in separate bowls (for example, one bowl for newspaper, one for construction paper and another for printer paper).

#### Step 2

Add enough water to the bowls so that the pieces of paper are covered. Soak for a minimum of 24 hours, depending upon the type of paper. Newspaper will need to be soaked for 24 hours, while white paper or other thicker types of paper may need to be soaked for two or three days. In hot and humid climates, the paper may spoil quickly, so check it regularly and refrigerate if necessary.

### Part II - Preparing the Pulp

The following items will be needed for this part:

- gloves
- large bucket
- blender
- sieve
- bowl
- aluminum foil pan
- water
- stir stick
- decorations (optional)

#### Step 1

Gloves should be worn for this step because the ink and toner from the used papers can stain the skin. Add a bit more water and mash the paper with the hands until it resembles thick, lumpy oatmeal (**Figure 1**).

#### Step 2

Transfer the pulp to a larger bucket or blender and add water to cover. Blend on high speed for a minute or until the pulp has a smooth, uniform consistency. If using a hand blender, ensure the sides of the bucket are high enough to prevent the pulp and water mixture from splashing over the sides.

#### Step 3

Strain the pulp by pouring it through a sieve into an empty bowl or bucket. **Figure 2** shows the sieving process for the celery pulp (discussed further in the *Celery Paper* instructions). One of the differences between the celery pulp and the newspaper pulp is the colour (green versus dark grey). The sieving process is performed for the newspaper to eliminate some of the toner and ink in the paper.

#### Step 4

Transfer the strained pulp into an aluminum foil pan. While stirring, slowly add water. Stop adding water when the desired consistency is achieved, usually at the point where the pulp appears uniform and not clumpy. If the mixture looks like heavy cream, the resulting paper will be thick. If it looks like milk, the paper will be quite thin. Thicker paper is easier to handle and is therefore recommended for the first couple of times the activity is performed.



Figure 1



Figure 2

### Step 5

If desired, decorations such as glitter, coloured tissue paper, dried flowers or food colouring can be added to the pulp.

## Part III - Paper Making

The following items will be needed for this part:

- pulp
- couching bed
- newspaper
- large plate
- kitchen cloth
- aluminum foil pan
- wooden frame and screen

### Step 1

Prepare a couching bed by placing a newspaper on top of a styrofoam plate or another large plate to collect excess water. Place a damp cloth on top of the newspaper. Place the couching bed beside the aluminum foil pan.



Figure 3

### Step 2

With the flat side of the screen facing the pan, angle the screen and slide it into the pan of pulp (**Figure 3**). Ensure the screen is parallel to the bottom surface of the pan. Before lifting the screen out of the tray, use fingers to spread the pulp on the screen to form a uniform layer of pulp. Lift the screen by the frame so that the fingers do not puncture holes in the layer of pulp. Let the water drain off, leaving a flat later of pulp on the screen (**Figure 4**).



Figure 4

### Step 3

Take the damp kitchen cloth from the couching bed and place it on top of the pulp on the screen. Gently press down to squeeze some of the excess water out of the pulp.

### Step 4

Flip the screen with the kitchen cloth onto the couching bed. The kitchen cloth should be underneath the layer of pulp.

### Step 5

Remove the screen and place the other piece of aluminum screening on top of the newly formed pulp sheet. Blot out excess moisture by gently pressing cloths, newspapers or paper towels onto the aluminum screening (**Figure 5**).



Figure 5

### Step 6

Remove all of the blotting materials and the screen. Allow the paper to air dry on the couching bed (**Figure 6**) or clip it to the kitchen cloth and hang it up to dry overnight. Alternatively, the sheet can be ironed dry (see Part IV).

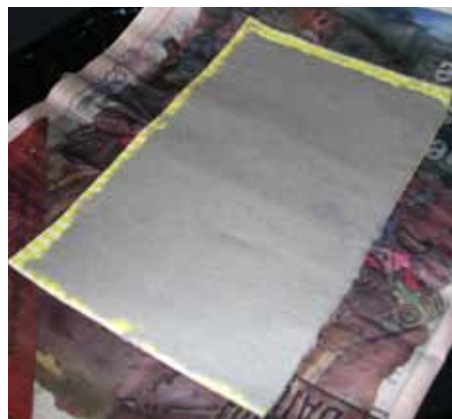


Figure 6

## Part IV - Ironing (Optional)

The following items will be needed for this part:

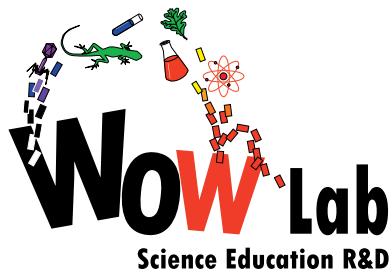
- kitchen cloth
- pulp sheet
- paper towels
- iron

### Step 1

Place the kitchen cloth and the pulp sheet on top of a piece of paper towel large enough that it can be folded over the cloth-pulp assembly. Fold the paper towel over top of the cloth and pulp sheet, fully enclosing them in the paper towel.

### Step 2

Iron the paper towel until it feels damp. Flip it over and repeat.



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### Step 3

After several minutes, the paper will be dry enough to be peeled off the kitchen cloth. If the paper is still damp, fold a fresh piece of paper towel over it as before and repeat the ironing process until the paper is completely dry.

## Part V - Clean up and Storage of Unused Pulp

The following items will be needed for this part:

- pulpy water
- sieve
- glue (optional)

### Step 1

Pour the pulpy water through a sieve to separate the pulp from the water. Pouring the pulpy water down the drain can clog pipes, so make sure that a sieve is used.

### Step 2

Remove the pulp from the sieve and squeeze into a ball. Break the ball into little pieces and put it in a dish pan to dry. The dried pulp can be used again at a later date.

### Step 3

The unused pulp can be made into paper mache. Add glue to the sieved pulp. This mixture will have a clay-like consistency and can be moulded to make small sculptures or jewelry.

# Activity Instructions - Celery Paper

## Part VI - Cutting and Boiling

The following items will be needed for this part:

- celery
- knife
- bleach
- water
- beaker
- hot plate, stove or slow cooker
- bucket

### Step 1

Chop up two to three stalks of celery into small pieces (approximately 1/2 in. cubes).

### Step 2

Pour 150 mL of bleach and 600 mL of water into a large beaker or pot. Add the chopped celery to the beaker (**Figure 7**).

### Step 3

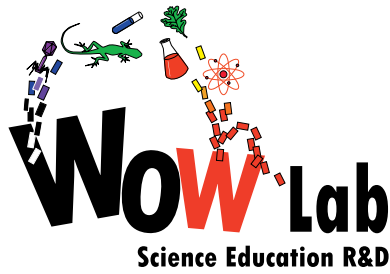
Boil the mixture on a stove or a hot plate for approximately two hours, stirring occasionally. Alternatively, if a stove or hot plate is not available, a slow cooker may be used instead.

### Step 4

Remove the mixture from the heat and wait for it to cool down. When cool enough to touch, empty the mixture into a bucket. Add water until the celery is completely covered and blend the mixture until the desired consistency is achieved.



Figure 7



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### Step 5

To make the pulp thinner, repeat Steps 3 and 4.

## Part VII - Preparing the Pulp

The following items will be needed for this part:

- sieve
- celery water
- bucket or bowl
- aluminum foil pan
- water
- decorations (optional)

### Step 1

Sieve the pulp by pouring the celery water through a sieve into an empty bowl or bucket. Place the pulp into an aluminum foil pan. The sieving process for the celery paper is used to remove the bleach solution.

### Step 2

Slowly add water while stirring the pulp in the aluminum foil pan until the desired consistency is reached, usually at the point where the pulp has a uniform consistency and is not clumpy. If the mixture looks like heavy cream, the paper will be thick. If it looks like thin milk, the paper will be quite thin.

### Step 3

If desired, decorations such as glitter, coloured tissue paper or dried flowers can be added to the pulp.

### Part VIII - Making the Paper

The following items will be needed for this part:

- pulp
- couching bed
- newspaper
- large plate
- kitchen cloth
- aluminum foil pan
- wooden frame and screen

#### Step 1

Prepare a couching bed by placing a newspaper on top of a styrofoam plate or other large plate to collect excess water. Place a damp cloth on top of the newspaper. Place the couching bed beside the aluminum foil pan.

#### Step 2

With the flat side of the screen facing the pan, angle the screen and slide it into the pan of pulp (**Figure 8**). Ensure the screen is parallel to the bottom surface of the pan. Before lifting the screen out of the tray, use your fingers to spread the pulp on the screen to form a uniform layer of pulp. Lift the screen by the frame so that the fingers do not puncture holes in the layer of pulp. Let the water drain off, leaving a flat later of pulp on the screen.

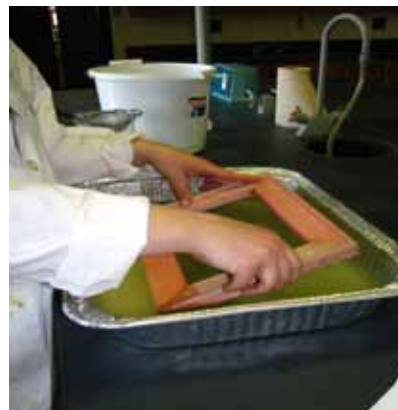


Figure 8

#### Step 3

Take the damp kitchen cloth from the couching bed and place it on top of the pulp on the screen. Gently press down to squeeze some of the excess water out of the pulp.

#### Step 4

Flip the screen with the kitchen cloth onto the couching bed. The kitchen cloth should be underneath the layer of pulp (**Figure 9**).



Figure 9



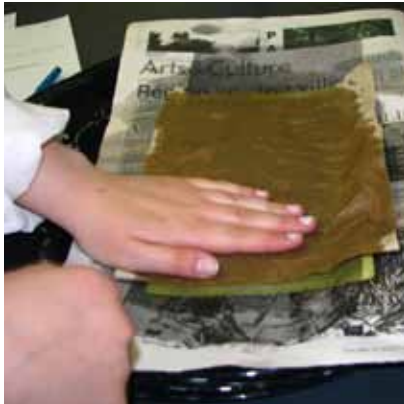


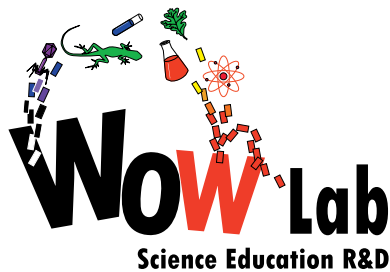
Figure 10

### Step 5

Remove the screen and place a fresh piece of aluminum screening on top of the newly formed pulp sheet. Blot out excess moisture by gently pressing cloths, newspapers or paper towels onto the aluminum screening (**Figure 10**).

### Step 6

Remove all of the blotting materials and the screen. Allow the paper to air dry on the couching bed or clip it to the kitchen cloth and hang it up to dry overnight. Alternatively, the sheet can be ironed dry (see Part IV).



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## Activity Instructions - Other Paper

The following items will be needed for this part:

- whole mangoes
- banana peels
- knife
- bleach
- water
- beaker
- hot plate, stove or slow cooker
- sieve
- bucket or bowl
- aluminum foil pan
- decorations (optional)
- couching bed
- newspaper
- large plate
- kitchen cloth
- wooden frame and screen

### Step 1

Follow the celery paper instructions to create fruit paper using one whole mango (without the pit) or two banana peels. The fibres in the banana peels are strong, so the peels should be boiled twice to create better quality paper. The mangoes only need to be boiled once.