

The Art of Guilloche

An activity on the wonderful art of guilloche—a technique that created wavy, decorative lines. This technique was once used to make symmetrical patterns on Canadian bank notes.

Description

In the 1970s, bank notes were decorated with guilloche patterns that can be easily reproduced with a Spirograph. These were not just beautiful details, but security features designed to make reproducing the notes extremely difficult. This activity allows children to explore the security features of bank notes and to analyze the artistic elements of older notes compared with those we use today.

Ages

7 to 12 years old

Learning objectives

Children will:

- recognize security features found on Canadian bank notes
- learn and reproduce the creative process of guilloche

Materials

To create your own bank note, you will need:

- sheets of paper or card stock
- Coloured pens or pencils
- a Spirograph (purchased or homemade)
- sticky putty like poster putty (optional)
- note design template (optional)
- a \$5 bill (optional)

To make your own spirograph, you will need:

- a cap from a water bottle
- a roll of Duck tape
- a rubber band
- a pair of scissors or a sharp object to make holes

Steps

1. Prepare the template

- Print the template (on card stock if possible)

2. Set up the activity

- Place the supplies and printed template on a table.
- Download the picture of the \$5 bill issued in 1972.
- Pull out a \$5 bill. If you don't have any, you can download a picture:

3. Start the discussion

Ask children to compare the \$5 bill from 1972 with the \$5 bill currently in use.

- Explain that the older bank note is very different from the ones we use today. It features several colours and many symmetrical and wavy patterns made up of fine lines. These patterns are called "guilloche."

To create these elaborate patterns on earlier bank notes, geometric lathes were used on metal plates. These plates were then used to print the notes. Guilloche patterns were very difficult to reproduce if you were a counterfeiter (i.e., someone making fake notes, which is illegal).

Get the children thinking about the purpose of security features on bank notes with these sample questions:

- Why is it important for bank notes be difficult to reproduce?
 - To prevent counterfeiters from creating counterfeit money, i.e., forgeries. If everyone could make money, would it still be valuable?
- Did you notice the green dots that are scattered all over the bank note from 1972?
 - They could be scratched off, which was a way of checking whether the note was real.

- Did you notice the artistic features on the 1972 note?
 - Those are guilloche patterns: symmetrical patterns that intersect.
 - These patterns were not just pretty—they also served as security features. The elaborate design made the bank notes more difficult to counterfeit.
- What are the anti-counterfeiting features on today's bank notes?
 - If you have a bill on you, touch it. It is made of polymer, a material that is stronger and harder to reproduce than paper. Feel the raised ink on the large number.
 - Look through the transparent window containing a metallic portrait. Look at the big frosted maple leaf: its outline should be transparent. You should also be able to see a hidden number if you look using a flashlight. All of these features are difficult for a counterfeiter to reproduce, making it a great bank note!

4. Create a guilloche

- Prepare the Spirograph. If you already have a Spirograph at home, you can skip this step.
 - Pierce three holes through the bottle cap, in different spots.
 - Wrap the rubber band around the cap.
 - Put the cap face down in the middle of the roll of Duck tape. (The cap replaces the spirograph wheel, while the roll of tape replaces the ring).
- Practise drawing your Spirograph patterns on a piece of paper.
 - Optional: Put four pieces of sticky putty underneath the ring to hold it securely on the sheet of paper (this is helpful if you're using a purchased Spirograph).
 - Place a wheel inside the ring. If you are using a purchased Spirograph, align the gear teeth of both pieces.
 - Holding the ring steady on the paper with one hand, place the tip of your pen in one of the holes in the wheel. Keep the pen vertical. Slowly spin the wheel by pushing it forward against the ring, making several full rotations.
 - Pick two or three favourite patterns to reproduce on your bank note.

5. Create your own bank note

- Choose which features you want to include in your bank note:
 - Security features (to make the note more difficult to counterfeit)
 - Denomination (the number that shows the note's value)
 - Name of the bank (be creative for your central bank's name!)
 - Signature of the bank's Governor (sign your bank note)
 - Portrait (picture or drawing)

- Use your Spirograph to draw your favourite designs on the bank note.
- Cut out and finish decorating the note and finalize its decoration.

Bonus activities

Mini-economics is child's play!

- Have the children create several bank notes of different denominations to start your own economy at home or in class.
 - Let them know that they can earn money by doing tasks or chores to buy special things in their own home or classroom.
 - Organize different types of markets for selling treats, activities or small toys, as in the "Avatar Market" activity.

