



## Miniature Worlds: An Invitation to Wonder Pre-Visit Activity

This pre-visit activity is designed to prepare students for a visit to the exhibition *Laetitia Soulier: The Fractal Architectures* on view at the Hood Downtown exhibition space from September 16–December 11, 2016. Contemporary French photographer Laetitia Soulier creates miniature architectural models and then uses the models to create beautifully intricate photographs that seem both realistic and imaginary. Based on the idea of fractal geometry, each world is composed around a simple geometric shape, the circle or the square, which repeats to create intricate patterns both infinitely small and infinitely large. These photographs, richly detailed with various textures, patterns, shapes, and colors, invite us to explore a range of visual qualities and wonder about the stories embedded within them.

This pre-visit experience will introduce students to Soulier's work, the geometry that structures her images, and the ideas she is exploring. There are three versions of the activity, one for elementary, middle, and high school students. Each experience should take about 30 minutes.

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**Image caption:** Laetitia Soulier, *The Square Roots 2*, from the series titled *The Fractal Architectures*, 2014, C-print. Courtesy of Claire Oliver Gallery and the artist. © Laetitia Soulier

## ***Laetitia Soulier: The Fractal Architectures***

### **Pre-Visit Activity**

#### **Objectives**

Students will:

1. Look briefly at a photograph by Laetitia Soulier entitled *The Square Roots 2*;
2. Examine the wallpaper pattern she used as the basis for the design of her photographic and installation series entitled *The Square Roots*;
3. Briefly discuss the properties of the geometric shapes that are featured in *The Square Roots* series.
4. Begin to think about the ideas expressed in Laetitia Soulier's work.

#### **Materials needed for these activities** **(Images included at the end of this resource)**

*The Square Roots 2*

Green wallpaper

Square

Cube

Hexagon

Parallelogram

#### **Method**

#### **Elementary Students**

Explain to students that at Hood Downtown they will look at the photographs of French photographer Laetitia Soulier who is known for creating beautiful photographs filled with patterns, shapes, and colors.

Show students the photograph *The Square Roots 2* as an example of her work and invite them to share their general observations aloud. Point out that the photograph is about 5 feet wide.

In particular, ask students to share what they notice about:

- The space and how it changes from floor to floor
- The objects and figure in the space
- The shapes they see

Point out that the artist, Laetitia Soulier, created this architectural world by hand. In real life, the architectural model is small – doll house sized. Soulier built everything – the floors, the drawers, the doors, the staircases, etc. (Students will see some actual models built by Soulier when they come to Hood downtown.)

She organized this architectural model around a pattern. Show students the image of the green wallpaper and then, while showing them the image of *The Square Roots 2* again, ask them to share their answers to the following questions:

- *Where do you see the wallpaper pattern featured in the photograph?*
- *What do you notice about the change in the size of the wallpaper pattern as it appears throughout the photograph?*

Show students the image of the green wallpaper and point out that the pattern is based on a repeating shape that changes form.

- Ask students to identify the shapes that they see.
- Can they find the simple shape that repeats (the square)?
- Return to the wallpaper image and ask students to describe where they see evidence that the square motif is repeated in different forms throughout the wallpaper.

Show them the image of the square and review the definition below.

**Definition of a square:** A four-sided flat shape with straight sides where all the sides have equal length.

Show students the image of the cube and review how a square is a component of a cube using the following definition.

**Definition of a cube:** A box-shaped solid object that has six identical square faces.

Show students the image of the cube and the image of the hexagon. Point out that the shape of a regular hexagon echoes the shape of a cube without the interior lines that form a Y. Review the definition of a regular hexagon below.

**Definition of a regular hexagon:** A six-sided flat shape with straight sides where all the sides have equal length.

Return to the photograph *Square Roots 2*.

- Ask students to point out where else in the photograph they see examples of squares, cubes, hexagons, and other geometric shapes.
- Ask students to share their thoughts on the role of the child and the tree in the middle of this space. What does their presence in the photograph make students think about?

Explain that when they visit Hood Downtown they will see the *Square Roots 2* photograph and others similar to it. They will learn why small and large repeating geometric patterns are important to Laetitia Soulier, how she has created these magical miniature worlds, and why she has placed children within them.

## Middle School Students

Explain to students that at Hood Downtown they will look at the photographs of French photographer Laetitia Soulier who is known for creating beautifully intricate photographs filled with patterns, shapes, and colors.

Show students the photograph *The Square Roots 2* as an example of her work and invite them to share their general observations aloud. Point out that the photograph is about 5 feet wide.

In particular, ask students to share what they notice about:

- The space and how it changes from floor to floor
- The objects and figure in the space
- The shapes they see

Point out that the artist, Laetitia Soulier, created this architectural world by hand. In real life, the architectural model is small – doll house sized. Soulier built everything – the floors, the drawers, the doors, the staircases, etc. (Students will see some actual models built by Soulier when they come to Hood downtown.)

She organized this architectural model around a pattern. Show students the image of the green wallpaper and point out that the pattern is based on a repeating shape that changes form.

- Ask students to identify the shapes that they see.
- Can they find the simple shape that repeats (the square)?

Show them the image of the green wallpaper and then, while showing them the image of *The Square Roots 2* again, ask them to share their answers to the following questions:

- *Where do you see the wallpaper pattern featured in the photograph?*
- *What do you notice about the change in the size of the wallpaper pattern as it appears throughout the photograph? How many changes in **scale** can they find?*

Return to the wallpaper image and ask students to describe where they see evidence that the square motif is repeated in different forms throughout the wallpaper.

Ask students to consider how the square relates to the other geometric forms in the wallpaper (the cube and the hexagon).

**Definition of a square:** A four-sided flat shape with straight sides where all the sides have equal length.

**Definition of a cube:** A box-shaped solid object that has six identical square faces.

You might want to show students the image of the cube and the image of the hexagon. Point out that the shape of a regular hexagon echoes the shape of a cube without the interior lines that form a Y. Review the definition of a regular hexagon.

**Definition of a regular hexagon:** A six-sided flat shape with straight sides where all the sides have equal length.

*Although a cube is technically made up of squares, what happens to the sides when rendered on a two-dimensional surface? (the squares become parallelograms).*

**Definition of a regular parallelogram:** A four-sided flat shape with straight sides where opposite sides are parallel, equal in length, and opposite angles are equal.

Return to the photograph *Square Roots 2*.

- Ask students to point out where else in the photograph they see examples of squares, cubes, hexagons, parallelograms, and other geometric shapes.
- Ask them to share their thoughts on the role of the child and the tree in the middle of this ordered space. *Why are they there? What do they add to the image? What do they make the students think about?*
- This work is part of a series entitled *The Square Roots*. *What does the title add to the image? Make students think about?*

Explain to students that when they visit Hood Downtown they will see the *Square Roots 2* photograph and others similar to it. They will learn why small and large repeating geometric patterns are important to Laetitia Soulier, how she has created these magical miniature worlds, and why she has placed children within them.

## High School Students

Explain to students that at Hood Downtown they will look at the photographs of French photographer Laetitia Soulier who is known for creating beautifully intricate photographs filled with patterns, shapes, and colors.

Show students the photograph of *The Square Roots 2* as an example of her work and invite them to share their general observations aloud. Point out that the photograph is about 5 feet wide.

In particular, ask students to share what they notice about:

- The space and how it changes from floor to floor
- The objects and figure in the space
- The shapes they see

Point out that the artist, Laetitia Soulier, created this architectural world by hand. In real life, the architectural model is small – doll house sized. Soulier built everything – the floors, the drawers, the doors, the staircases, etc. (Students will see some actual models built by Soulier when they come to Hood downtown.)

She organized this architectural model around a pattern.

- Show them the image of the green wallpaper and then, while showing them the image of *The Square Roots 2* again, ask them to share their answers to the following questions:
  - *Where do you see the wallpaper pattern featured in the photograph?*
  - *What do you notice about the change in the size of the wallpaper pattern as it appears throughout the photograph? How many changes in **scale** can they find?*

Show students the image of the green wallpaper and point out that the pattern is based on a repeating simple geometric shape.

Ask students to identify the basic shape (square).

Ask them to consider how the square relates to the other geometric forms in the wallpaper (the cube, hexagon, and parallelogram).

You may find the images at the end of this resource and the following definitions helpful in your discussion:

**Definition of a square:** A four-sided flat shape with straight sides where all the sides have equal length.

**Definition of a cube:** A box-shaped solid object that has six identical square faces.

**Definition of a regular hexagon:** A six-sided flat shape with straight sides where all the sides have equal length. (You may want to point out that the shape of the regular hexagon echoes the shape of a cube without the interior lines that form a Y.)

**Definition of a regular parallelogram:** A four-sided flat shape with straight sides, where opposite sides are parallel, equal in length, and opposite angles are equal. (As the image of the parallelogram at the end of this resource shows, the square sides of a cube become parallelograms when rendered on a two-dimensional surface).

Return to the photograph *Square Roots 2*.

- Ask students to point out where else in the photograph they see examples of squares, cubes, hexagons, parallelograms, and other geometric shapes. Ask them to consider how these shapes change in scale throughout the photograph.

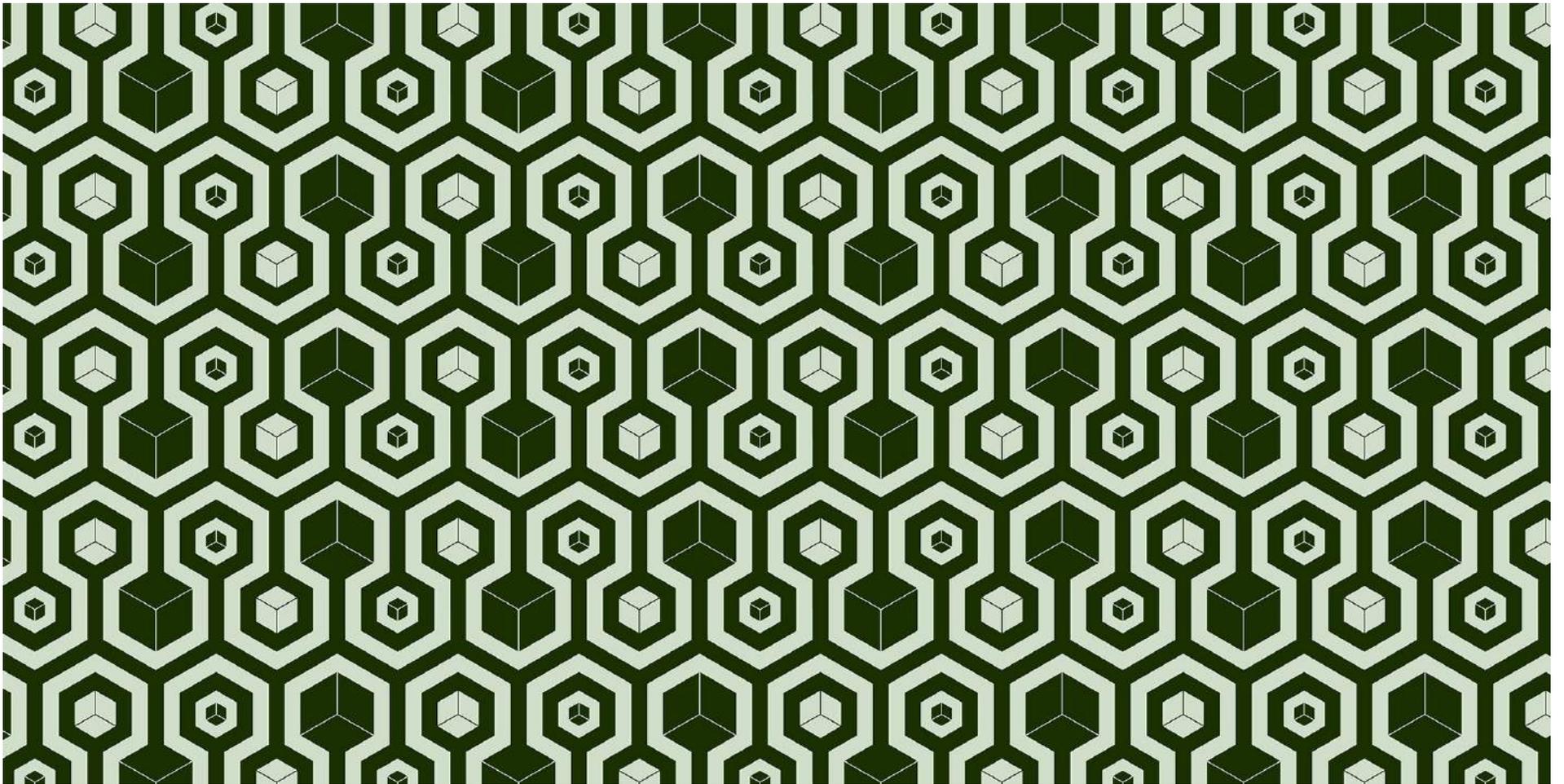
- Ask them to share their thoughts on the role of the child and the tree in the middle of this ordered space. *Why are they there? What do they add to the image? What do they make the students think about?*
- This work is part of a series entitled *The Square Roots*. *What does the title add to the image? Make students think about?*

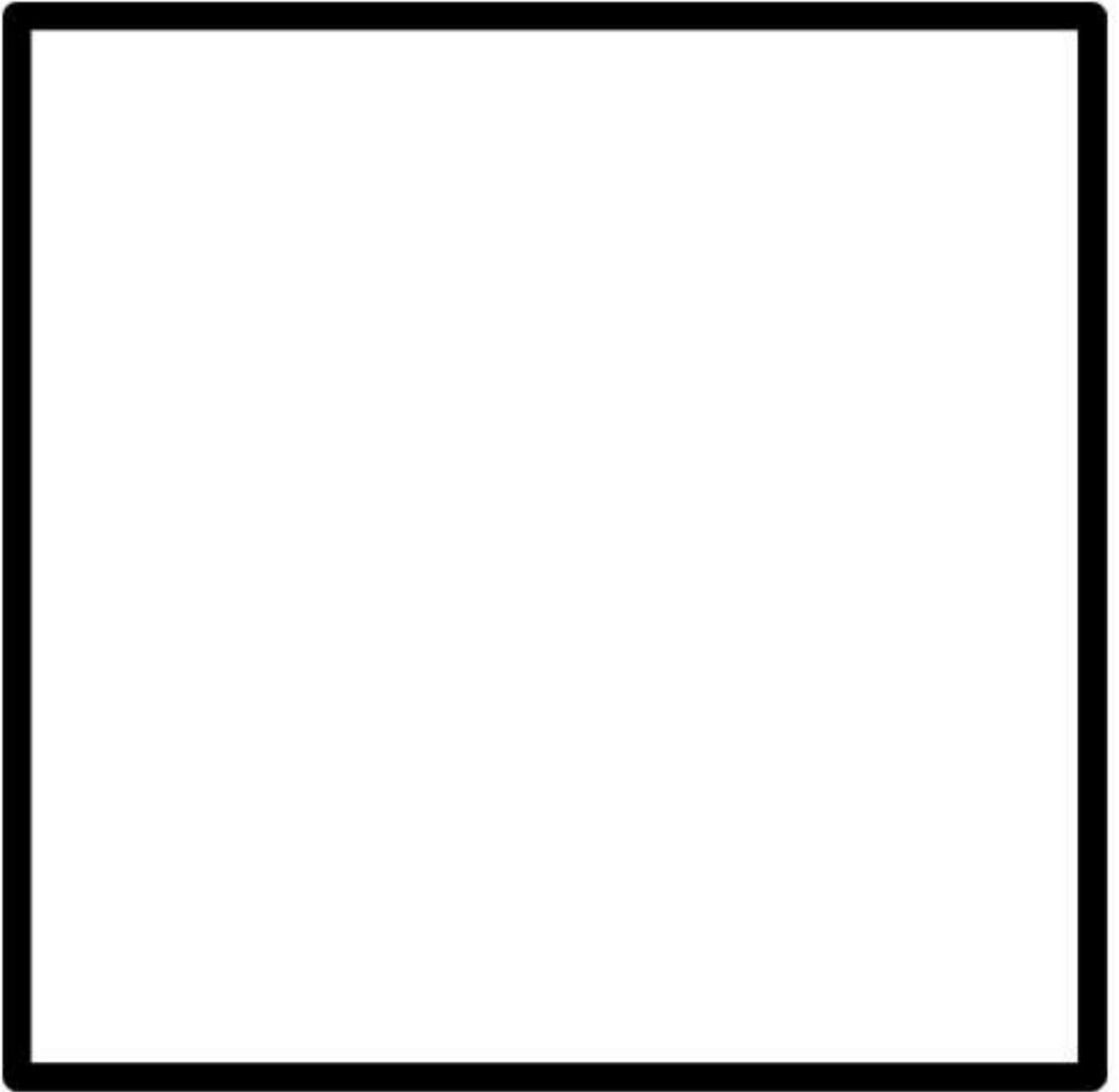
If time allows, watch the video of Laetitia Soulier describing her work at <http://www.laetitiasoulier.com/video/>.

Explain to students that when they visit Hood Downtown they will see the *Square Roots 2* photograph and others similar to it. They will learn more about why geometry and fractal mathematics are important to Laetitia Soulier, how she has created these magical miniature worlds, and the role of children within them.

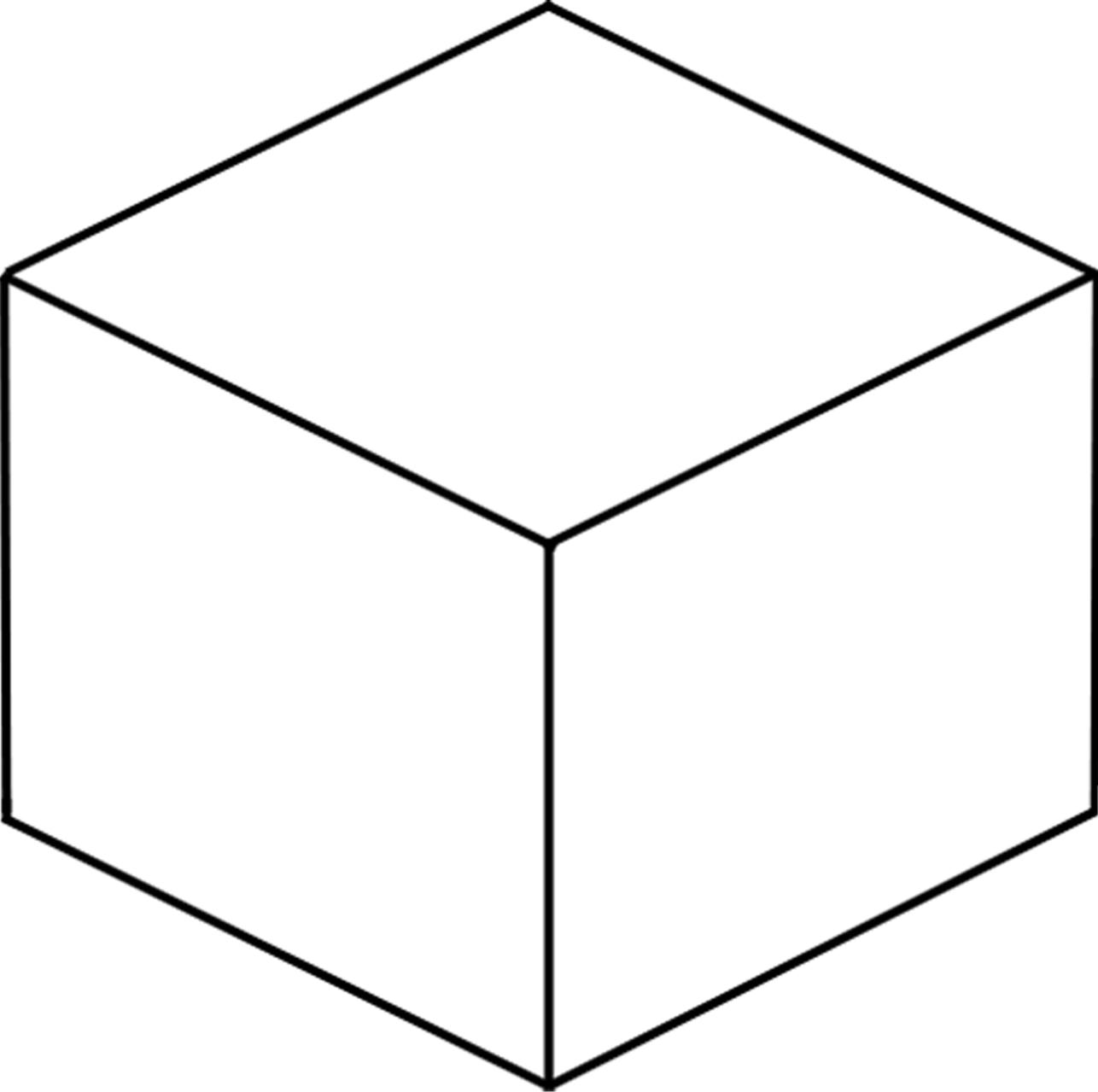


Laetitia Soulier, *The Square Roots 2*, from the series titled *The Fractal Architectures*, 2014, C-print. Courtesy of Claire Oliver Gallery and the artist. © Laetitia Soulier

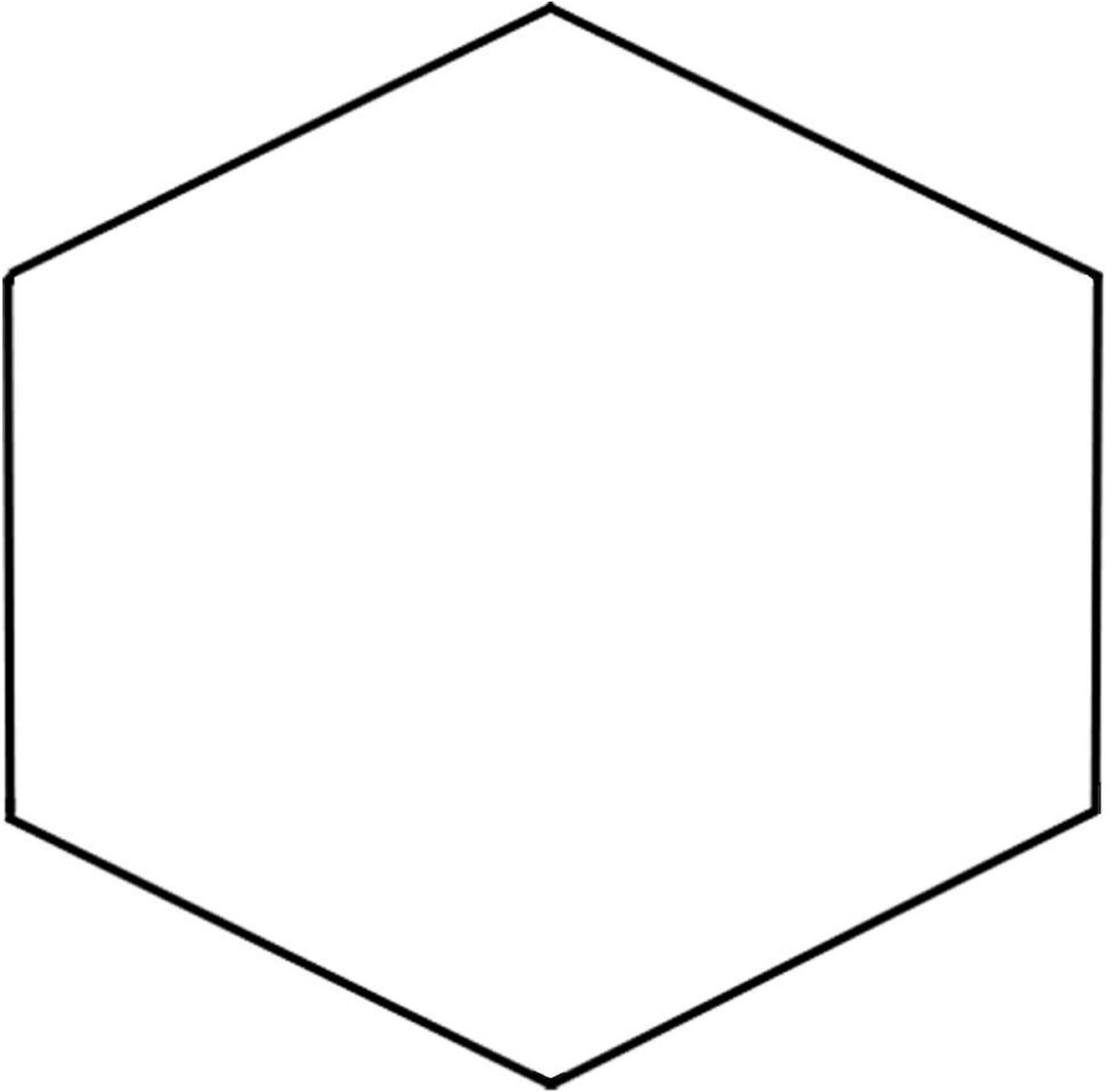




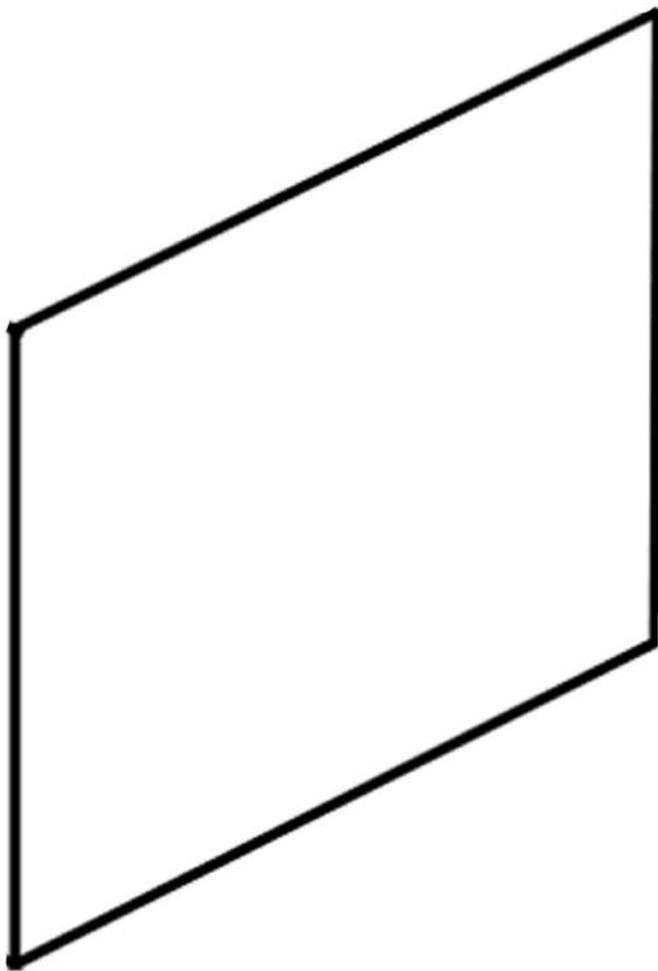
Outline of a Square



Cube



Regular Hexagon



Parallelogram