

Week 2: Mirror Image

Level: Streamlined

MATERIALS NEEDED

- -Paper
- -Pencils
- -Colored Pencils, Markers, Crayons (Optional!)
- -Visuals for class, whether drawn from this tutorial or supplemented by you or your director. You will need:

INCLUDED VISUALS:

- William the Conqueror's Tower of London, three variations
- Medieval English Crown
- Karl Linneaus (we'll meet him in the Artists Section in Cycle 2) Flowers
- A Peacock and Gryphon pattern from extant Medieval fabric, two variations
- Herbivore, Carnivore and Herbivore animal faces
- Quotes from Helmut Jahn and Sir Kenneth Clark

[Read the quote below to start]

"For me, drawing generates thinking and vice versa." --Helmut Jahn, Architect.

Tutor: Last week, we learned you can break any image down unto OiLS. Does anyone remember what OiLS stands for?

[Ovals, dots, straight lines, angled lines, and curves. Put up the OiLS poster if you like at this time.]

Tutor: Today, we're going to play with mirror images. Given an image that's been broken in half, you're going to draw the other half.

Why would we do this?

Well, did you know that your brain can be lazy and jump to simple solutions just to save time and move on to something more interesting? (And here you thought it was just you vs. chores/homework. It can also be you v. your brain) Your brain constructs simple patterns which scientists call "icons". (From the Greek *eikon* which means, "image".)

If I draw/show you this: *[Leaf icon, eye icon]* do you know what it is?

<show the Leaf/Eye icon page, or draw similar icons on the board>

Tutor: Right, it represents a leaf and that one, an eye. These simple drawings look enough like leaves and eyes that your brain can identify them, and move on. But a real leaf, a real eye, looks a little different .

[show the photos and line drawings based on leaves and eyes]

Whether you look at the photo or drawing, we can see real leaves and eyes are more complicated than the icon patterns, even though they can look basically similar. Breaking the image forces the brain to slow down and actually *think* through what it is seeing.

Which brings us back to today's lessons: drawing the mirror image, or other half of something.

When we break a recognizable image in half, our brain has a harder time recognizing it at an icon pattern level. Because of that, you can more easily see the OILS that make up the half-image.

And when you have to hand-draw the other half of that image, the part of our brain that wants to just make a simple icon pattern and move on has to stop and really look:

-Look at the length of the lines, relative to the lines around them.

-Look at the arc of a curve,

-Look at the angles and spaces that make up an image.

Then, and only then, does your brain actually SEE the image in its full detail.

Art Historian Sir Kenneth Clark said, *"It is often said that Leonardo drew so well because he knew about things; it is truer to say that he knew about things because he drew so well."*

<Show the quoteboard, if you like>

So, take your patterns, look, and try to copy, line for line, the other half of your image.

And remember, be patient with yourself, this is about learning and improving.

Remember Chuck Jones and if you have to, get the bad drawings out so the good ones can come.

Activity:

Hand out or have student select one of the patterns to draw a mirror image of. Included are three variations of William the Conqueror's Tower of London, Karl Linnaeus's work, and a pattern based on the science sentence. If you have something you've found and are inspired by, please use that!

Alternatively, two students could team up to play a mirror image game. Fold a paper in half. The first student draws something simple on one half (like a square, or half a heart). The second student takes the paper, mirror images the first shape, then adds something to his or her half and hands it back. The first student mirror images this new addition and adds a third element, and so on.

Another alternative, depending on your class, is to play this game on the board—drawing a line down the center, then drawing something on one side of the line, and each student gets to mirror image that item before adding another element to their drawing for the next to image.

Review:

Review OiLS and what they stand for?

Why did we draw mirror images?

Week 2: Mirror Image

Level: More Information

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[Read the quote below to start]

"For me, drawing generates thinking and vice versa." --Helmut Jahn, Architect.

Tutor: Last week, we learned you can break any image down unto OiLS. Does anyone remember what OiLS stands for?

[Ovals, dots, straight lines, angled lines, and curves. Put up the OiLS poster if you like at this time.]

Tutor: Quick show of hands: Do your feet hurt right now?

[This will likely surprise your class, they may or may not raise their hand, but that's okay, you weren't taking a poll.]

Okay, you can put your hands down. *[If any put them up]* How many of you had to stop and think about whether or not your feet hurt when I asked? Until I asked, did your feet hurt at all? Were you even aware of how your feet felt, good or bad?

Your brain takes in millions of signals every second. Every nerve in your body sends signals. Your nose is sending signals of thousands of aromas, your ears, dozens, maybe thousands of small sounds. Your eyes are adjusting to light levels as they look around, taking in things, and none of that includes your own active thoughts inside your brain.

Most of the time, your brain has to sort through the mass of signals to concentrate on the few important ones. Have you ever taken off your shoes or unbuttoned a pair of pants and discovered they were tight – but only after you took them off?

[Might get some parents nodding at this one too!]

Its because your brain chose to ignore the signals of discomfort until they were bad enough-your tight shoes are livable – until they give you a blister. We ignore the average smell of our surroundings unless something starts to burn or smell bad, or we smell dinner-and suddenly get hungry.

Drawing is the same way. The brain *wants* to ignore or gloss over details if you give it half a chance, just in case something else is more important around here.

Check this out: If I show you this, what do you see?

<show the Leaf/Eye icon page, or draw similar icons on the board>

Tutor: Right, it represents a leaf and that one, an eye. These simple drawings look enough like leaves and eyes that your brain can identify them, and move on. Scientists call these simplified patters “icons” of objects. The word “icon” comes from the Greek word “*eikon*” meaning image. But a real leaf, a real eye, looks a little different.

[show the photos and line drawings based on leaves and eyes so the students can see the icons, photographs and drawings based on photos at the same time. Whether you are holding both papers lay both papers on a communal table is up to you.]

Our brains glossed over a lot of details to create these simple icons of eyes and leaves, which anyone, world-wide could recognize. The problem is, our default setting in our brains is frequently the simplest, fastest, route to the solution, in order to move on. These icons look close enough to the real thing so we can recognize what they represent – but they don’t look realistic, and we missed a lot of details.

In fact, science students used to be formally trained in drawing in order to make records of their observations. Learning to draw had another side effect; it forced the scientist to become better observers of nature because they really had to look at the way their subject appeared in order to draw it (rather than how they assumed it appeared). Even today, with photography, drawing is still preferred by many scientists and science instructors.

Which brings us back to today's lessons: drawing the mirror image, or other half of something.

When we break a recognizable image in half, our brain has a harder time recognizing it at an icon pattern level. Because of that, you can more easily see the OiLS that make up the half-image.

And when you have to hand-draw the other half of that image, the part of our brain that wants to just make a simple icon pattern and move on has to stop and really look:

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So, take your patterns, look, and try to copy, line for line, the other half of your image.

And remember, be patient with yourself, this is about learning and improving. Follow Chuck Jones's advice if you have to, get the bad drawings out so the good ones can come.

Activity:

There are several patterns included, and nearly all feature a black border studded with diamonds and lines.

If your student has trouble, he or she can connect the diamonds and lines, top to bottom and side to side. This is called gridding, and it can help see proportions. If, on the Tower of London, for example, you're having a hard time figuring out where to put the mirror image tower, you can check where the Tower intersects with the grid lines on the complete side, and match that on the incomplete side. But it is more beneficial to try without the grid first.

Because some people are right handed, and some are left, some of the patterns are set up so you can fill out one side or the other. Right handed students will be more comfortable filling in papers where the completed pattern is on the left side, leaving the

right side open. Left handed students will have an easier time with a completed pattern on the right side, leaving the left side open.

Some of the patterns included are deliberately too complex to finish in a half hour – these can be taken home for more practice, handed out for at-home practice, or ignored altogether.

Review:

What do OiLS stand for?

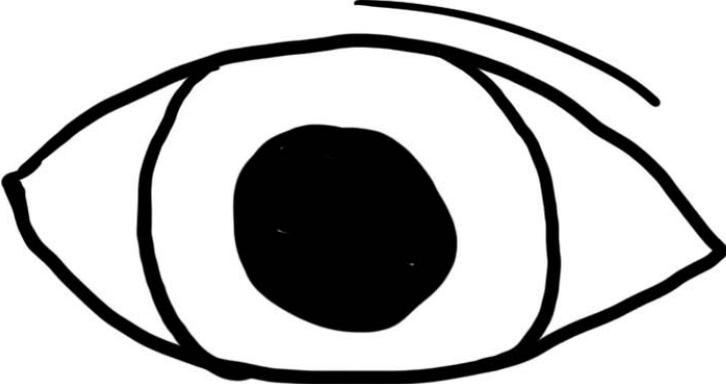
What sort of simplified image does your brain try to construct? {Icons}

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-Helmut Jahn, Architect



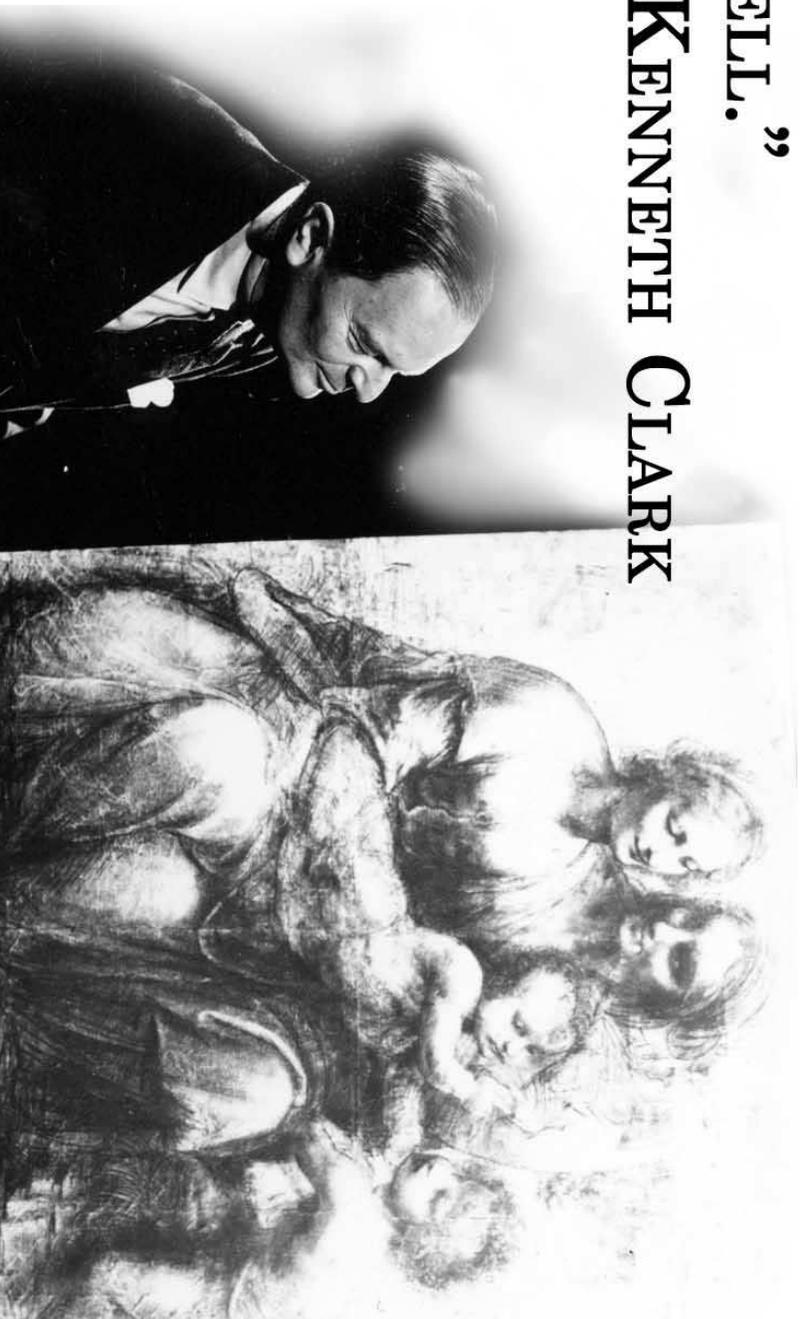
Icon Patterns

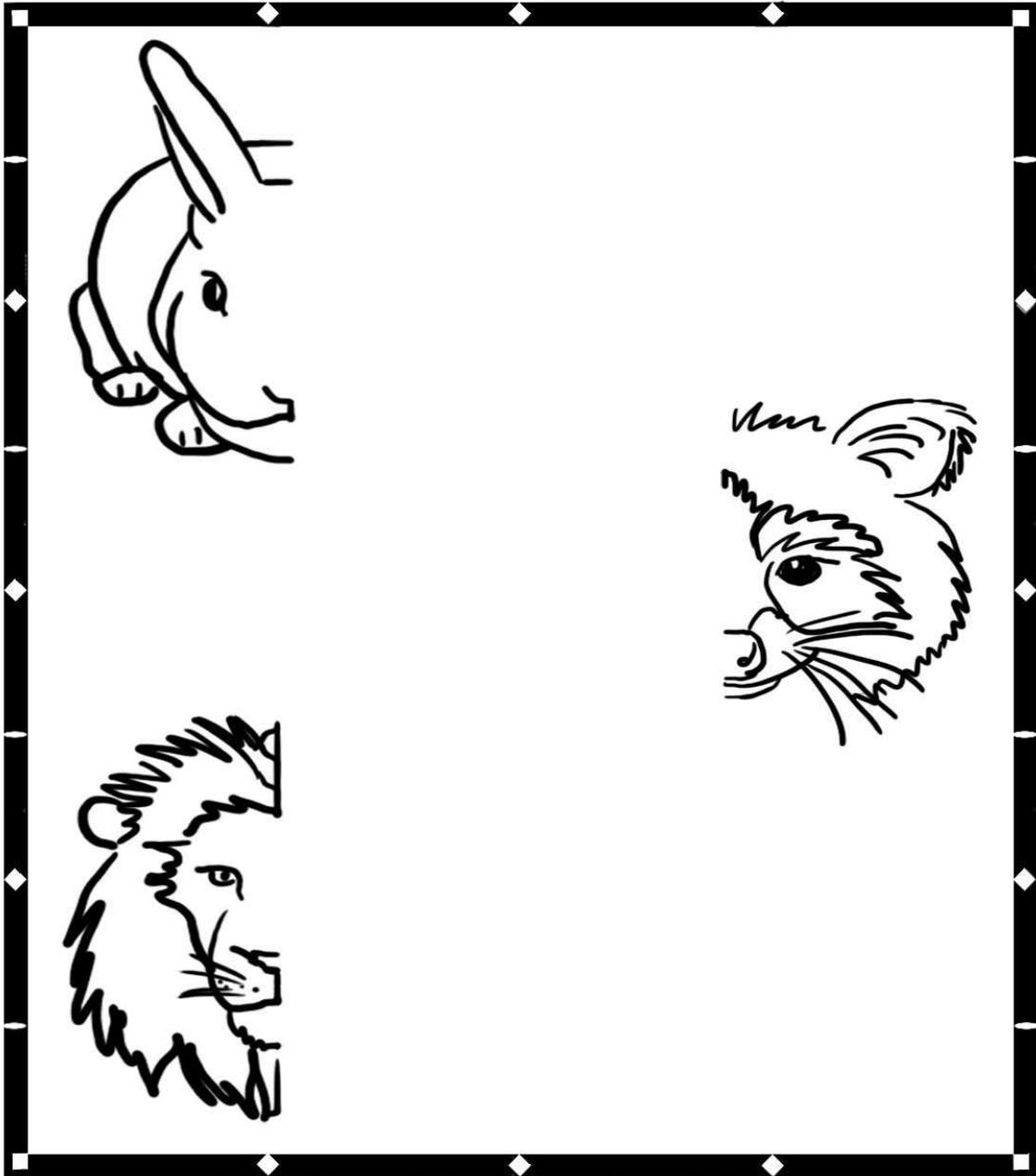




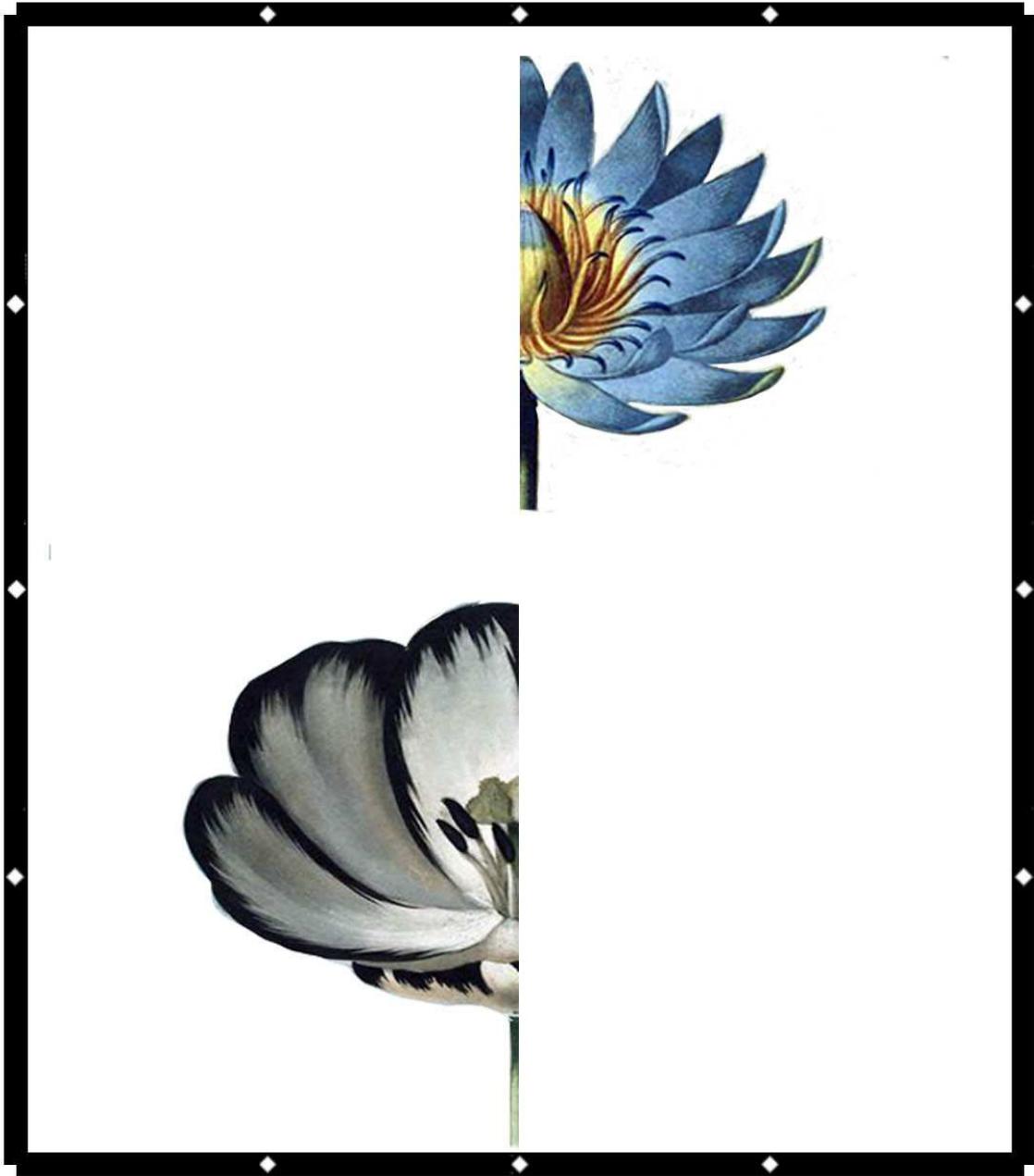
**“IT IS OFTEN SAID THAT LEONARDO DREW
SO WELL BECAUSE HE KNEW ABOUT
THINGS; IT IS TRUER TO SAY THAT HE
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SO WELL.”**

-SIR KENNETH CLARK

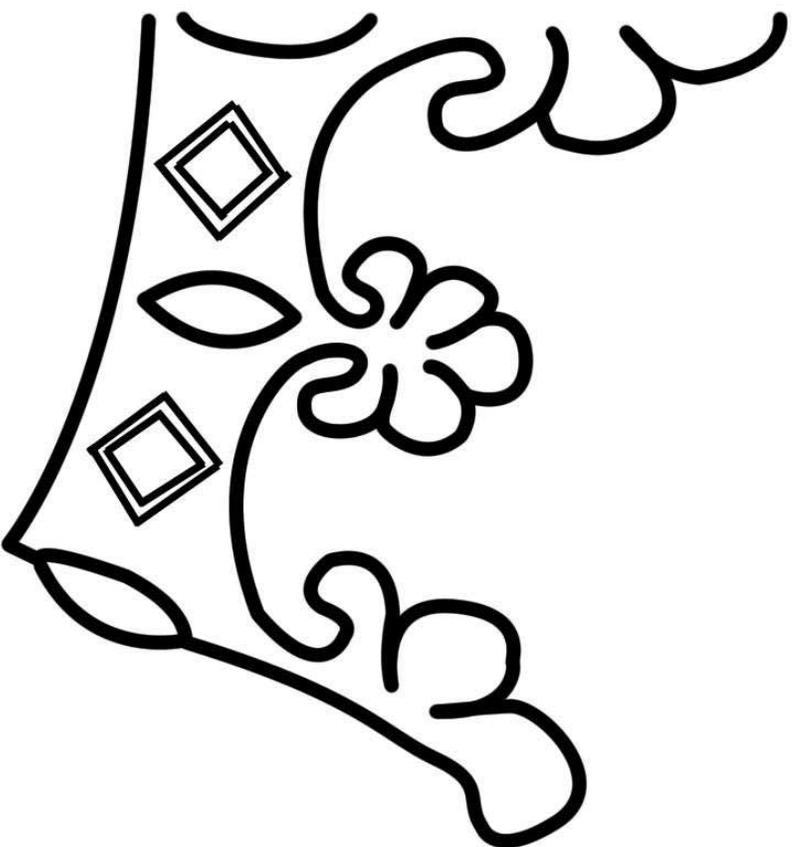




THREE TYPES OF CONSUMERS ARE
HERBIVORE, CARNIVORE, OMNIVORE

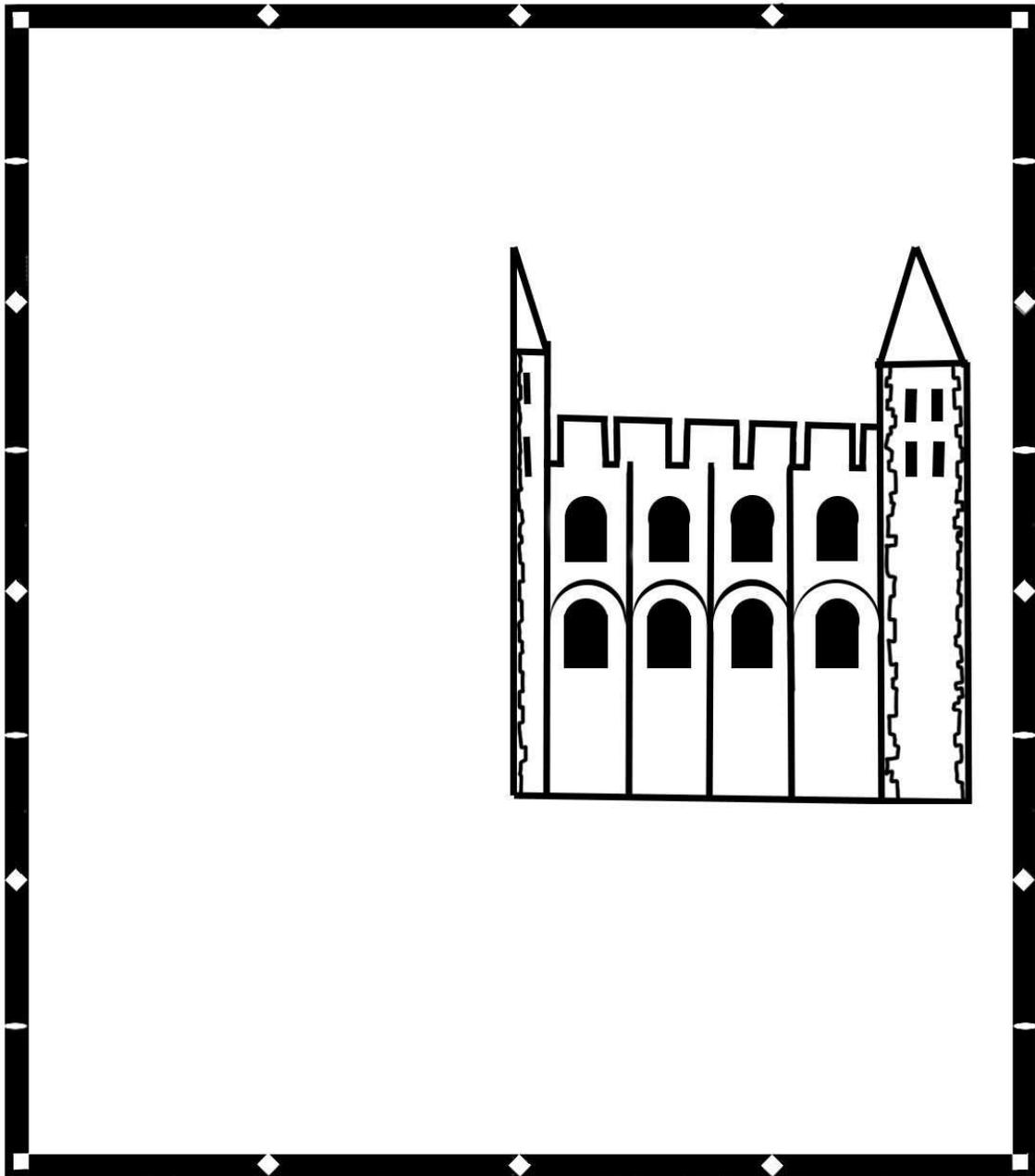


BLUE EGYPTIAN WATER LILY AND TULIPS DRAWN BY CARL LINNEAUS

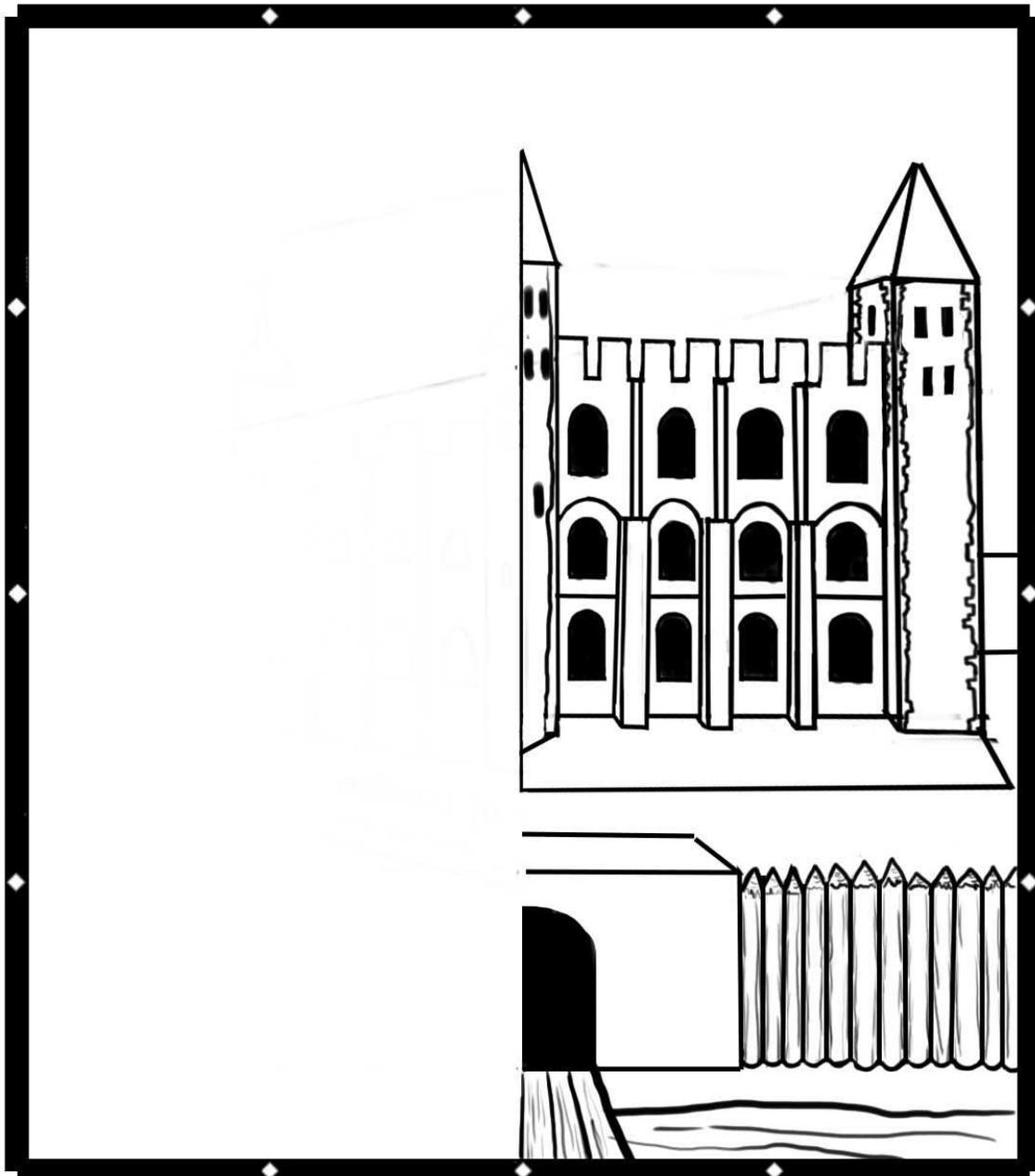


Crown of Medieval England

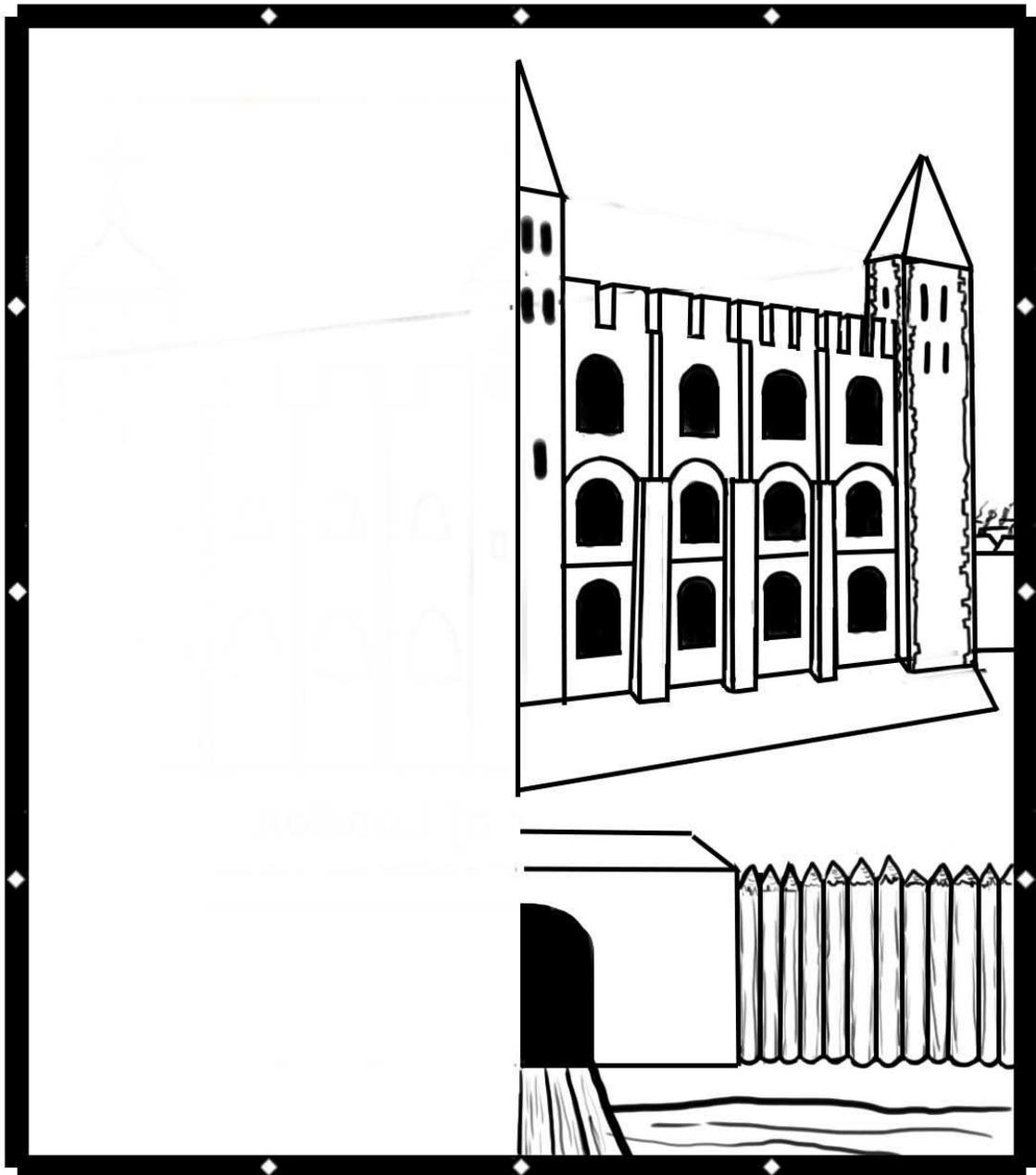
Based on multiple illustrations and tomb effigies of William I through Henry III



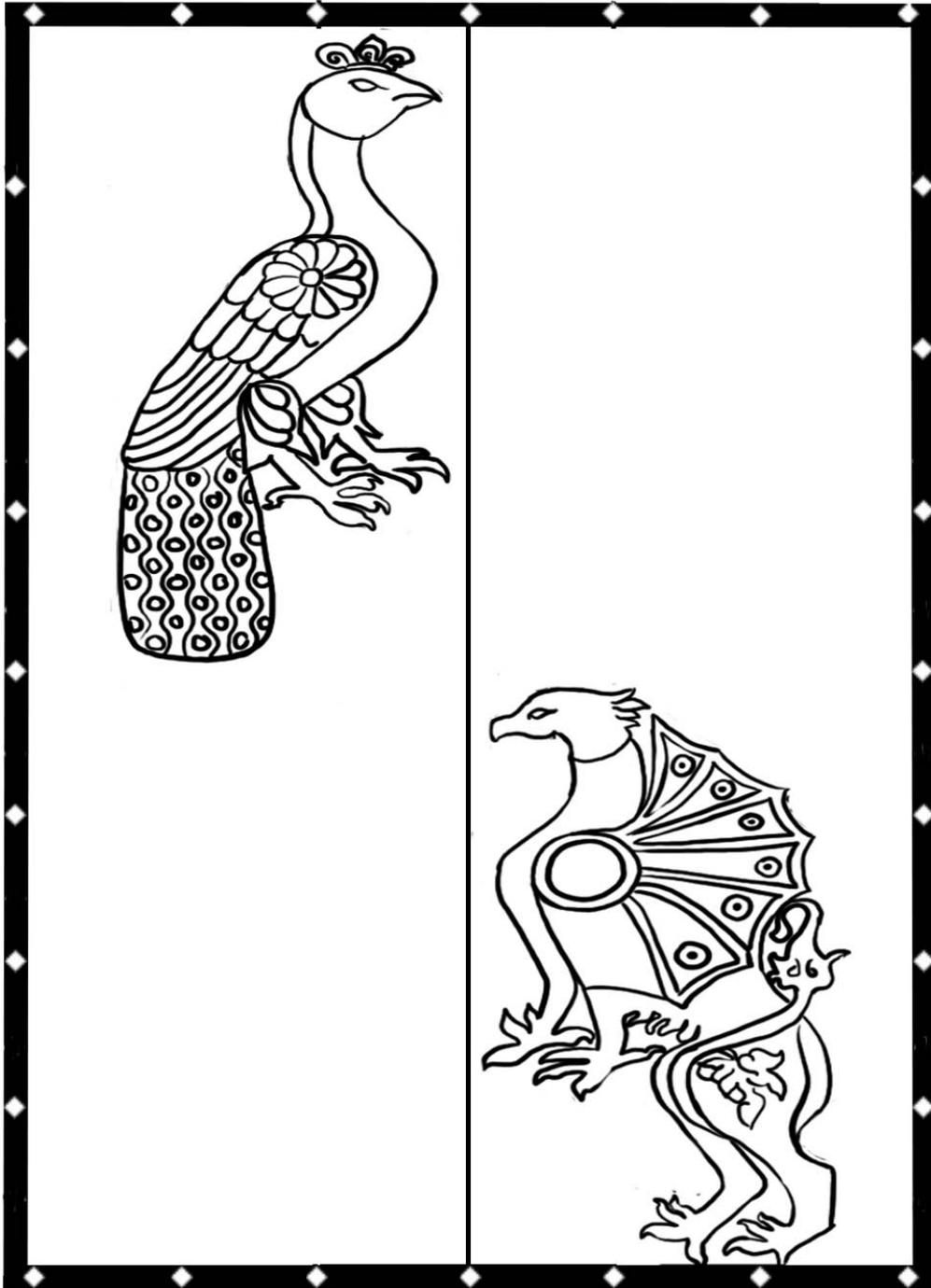
WILLIAM THE CONQUEROR BUILDS THE TOWER OF LONDON
After conquering England, William the Conquoror built the 'White Tower', now the center of the Tower of London. Shown is the original wooden wall and moat.



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PEACOCK AND GRYPHON FROM 14TH CENTURY SILK PATTERN FOUND IN POLAND.



PATTERN OF 14TH CENTURY SILK FOUND IN POLAND.