

5 ART AND TECHNOLOGY

IN THIS UNIT

- ▶ Consider art preservation vs. reproduction
- ▶ Weigh the pros and cons of art reproductions
- ▶ Interpret an infographic about technology and art
- ▶ Review a piece of art

SKILLS

LISTENING

Listen for attitude

SPEAKING

Describe a visual

GRAMMAR

Review of the passive voice

CRITICAL THINKING

Use visual features to understand graphics

CONNECT TO THE TOPIC

1. How does the museum exhibit in the photo compare to a traditional art museum exhibit?
2. How can technology affect the way we see and make art?

Work by Friedensreich Hundertwasser on display in the Atelier des Lumières, Paris, France

PREPARE TO WATCH

A VOCABULARY Listen to the words in bold and read the sentences. Choose the correct meanings for the words.  5.1

- Art experts try to determine the **authenticity** of artworks. For example, they study the paint and other materials to make sure they are from the right time period.
 - the quality of being real
 - the quality of being fake
 - the quality of being different
- I prefer **contemporary** art to the art of previous generations.
 - traditional
 - modern
 - computer-generated
- Organization is **crucial** to the success of a museum exhibit.
 - powerful
 - optional
 - important
- The company had to **declare** bankruptcy because they could not pay their bills.
 - request payment
 - break off an agreement
 - say something in an official way
- Art, architecture, and music are all part of one's cultural **heritage**.
 - traditions
 - information
 - museums
- The *Mona Lisa* is da Vinci's **masterpiece**. Some of his other works show less skill.
 - an early work
 - an inferior work
 - a work of extraordinary skill
- We are aware of the results of the study. They were made **public** in a report last month.
 - known
 - famous
 - secret
- I had a wonderful meal at the new restaurant. I would love to **recreate** it at home.
 - make again
 - have a good time
 - have something delivered
- Businesses often **reproduce** works of art to sell in museum gift shops.
 - steal
 - make a copy of
 - reuse or recycle
- Can you **scan** the photo and email it to me?
 - copy with a computer
 - read quickly for details
 - look at carefully

B PERSONALIZE Discuss the questions with a partner.

- Do you like **contemporary** art? Explain.
- Which art **masterpieces** would you like to see in person? Why?
- How much personal information do you make **public** on social media? Explain.
- How important is **authenticity** in items you buy? Do you care if something is a copy?
- What aspects of your cultural **heritage** are most important to you?
- What skills are **crucial** for you to be successful in your job?

Terracotta warriors are famous works of art from China.



C Complete the sentences with words from the box.

authenticity contemporary heritage masterpieces recreated

- A:** Do you want to go to an exhibit at the art museum with me?
- B:** Maybe. Is the artwork pretty modern? I love ¹_____ art!
- A:** No, it's not modern. It's an exhibit of several ²_____ from ancient China.
- B:** Ancient China? Doesn't moving the artwork damage it? Don't they want to preserve their ³_____ by keeping the art safe?
- A:** Sure! The exhibit doesn't show the actual artwork, just reproductions. The museum has ⁴_____ the original pieces. Researchers used technology to make exact copies. So, in a way, it *is* modern art.
- B:** Doesn't the museum care about ⁵_____? Are they OK with copies of the art?
- A:** It's a way to expose people to culture. People around the world can see this incredible art, but there's no risk of destroying it.
- B:** Well, I'm not convinced, but I'll come check it out.

REFLECT Consider art preservation vs. reproduction.

You are going to watch a video about an organization that makes art reproductions. Discuss the questions with a partner.

- Why is it important to save art from different time periods?
- Who is responsible for preserving art?
- Sometimes works of art are damaged when displayed. Which is more important to you—seeing an original masterpiece, or helping protect it by seeing a very good reproduction instead?

WATCH & SPEAK

WHERE MODERN TECHNOLOGY MEETS ANCIENT ART

A PREVIEW Look at the photo and read the caption and the title. Discuss the questions with a partner.

1. How can technology give more people access to art?
2. What role might modern technology play in art preservation?

This exhibition created by Factum Foundation is an immersive experience that transports the visitor to the tomb of Seti I through the use of cutting-edge technology, 1:1 scale, perfect facsimiles, and original objects.

B PHRASES TO KNOW Read the definitions of these phrases from the video. Then discuss the questions with a partner.

a fine line: a very small difference

do something in the name of: to use as a reason for doing something

a take on something: an opinion on something

1. Do you think there is **a fine line** between hard work and overwork? Explain.
2. Do you know of any unusual things artists **have done in the name of** art?
3. What is **your take on** your school's grading policies?

C MAIN IDEAS Watch the video and take notes. Write T for *True*, F for *False*, or NG for *Not Given*. ▶5.1

1. _____ At Factum Arte, they make replicas, or reproductions, of ancient art.
2. _____ Adam Lowe says they are trying to redefine the relationship between originality and authenticity.
3. _____ They don't like to use technology because it might damage the artwork.
4. _____ They want viewers to believe the art is real.
5. _____ Creating facsimiles is the cheapest way to help preserve the original art.
6. _____ The same methods can be used to create contemporary art.

D DETAILS Watch the video again. Complete the sentences with the words. ▶5.1

destruction	machines	preservation	technology
exhibit	masterpieces	print	tomb

1. The workshop is reimagining the art of _____.
2. Adam Lowe uses _____ to preserve cultural heritage.
3. His team uses scanners to record _____ in great detail.
4. To reproduce the art, 3D printers and other _____ are used.
5. People prefer to see the *Mona Lisa* rather than a(n) _____.
6. Giovanni Belzoni discovered Seti I's _____.
7. The Hall of Beauties is an example of a successful _____ by Factum Arte.
8. People can choose to help preserve great art, or contribute to its _____.

LISTENING SKILL Listen for attitude

When you listen, it's helpful to know the speaker's attitude. This will help you understand what the speaker is trying to communicate. Attitude is often conveyed through tone of voice, but it can also be communicated with adverbs. To identify attitude, listen for:

► Adverbs of degree

Adverbs of great intensity (e.g., *utterly*, *totally*, *absolutely*) express strong feeling.

*I was **utterly** thrilled.*

Adverbs of lesser intensity (e.g., *somewhat*, *slightly*, *rather*) can indicate a lack of interest or involvement.

*The movie was **somewhat** entertaining.*

► Evaluative adverbs

These are often at the beginning of the sentence and provide context for the entire sentence. They express:

Emphasis (e.g., *clearly*, *apparently*, *obviously*, *naturally*)

*The exhibition opens on Friday. **Naturally**, we are very excited to see it.*

Note: Be careful how you use these adverbs because they can also show a degree of sarcasm or irony.

Emotion (e.g., *sadly*, *honestly*, *surprisingly*, *(un)fortunately*, *hopefully*, *actually*)

***Sadly**, she never finished her degree.*

Judgment (e.g., *foolishly*, *rightly*, *thoughtfully*, *mistakenly*, *unwisely*)

***Foolishly**, we didn't bring our passports.*

E APPLY Listen to the sentences. Write the adverbs you hear. Then match the adverb types to the sentences. 🗣️ 5.2

a. great intensity b. lesser intensity c. emphasis d. emotion e. judgment

- _____ It's _____ realistic, yet not real.
- _____ _____, they didn't pack the artwork properly, and it was damaged.
- _____ _____ we can get tickets to the exhibit.
- _____ Normally, I say something _____ evasive, like "We're trying to use technology to preserve cultural heritage."
- _____ _____, the painting is a masterpiece!

GRAMMAR Review of the passive voice

We use the **passive voice** when we want to focus on the action rather than the agent (performer) of the action.

The passive voice is formed with *be* + the past participle of the verb. The form of *be* shows whether the verb is in the present, past, or other form. Use *by* + agent if the performer is important. If the agent is unimportant, understood, or unknown, a *by* phrase is not necessary.

Active: *Egyptians **built** the tomb to last for eternity.*

Passive: *The tomb **was built** (by Egyptians) to last for eternity.*

Active: *People also **call** the painting The Great Wave.*

Passive: *The painting **is also called** The Great Wave.*

For passive modals, use a modal + *be* + past participle.

Active: *People **can find** the statue at the Rodin Museum in Paris.*

Passive: *The statue **can be found** at the Rodin Museum in Paris.*

F GRAMMAR Rewrite the sentences in the passive. Use a *by* phrase if the agent is important. Then compare answers with a partner.

- The artist painted the masterpiece in the 16th century.

- People can see Matisse's paintings at the museum downtown.

- Hokusai made the famous wood print.

- The artist constructs the artwork out of metal and stone.

- Millions of people visit the Louvre Museum every year.

G GRAMMAR Describe a piece of art that you know to a partner. Use the passive as appropriate.

The piece of art is called . . .

It shows . . .

It was painted/made/built by . . .

It has been described as . . .

REFLECT Weigh the pros and cons of art reproductions.

With a partner, list three or more advantages and disadvantages of reproductions like those created by Factum Arte. Make a chart like this one in your notebook.

Advantages	Disadvantages
Can be transported to other places	

PREPARE TO LISTEN

A VOCABULARY Listen to the words in bold. Read the sentences and match the words with their definitions.  5.3

- (n) identification of someone or something
- (v) to encourage; to help develop
- (adj) easily seen or noticed; clear or obvious
- (n) a collection of objects on public display in an art gallery or museum
- (adj) easy to get to, see, or use
- (n) someone who produces something new
- (v) to move text or an image on a screen so you can see what you want
- (n) movement made by someone or something
- (n) someone who writes computer programs
- (n phr) computer programs that can do things the human brain does

- _____ Is it important for museums to be **accessible**? For example, should they be inexpensive and easy to reach using public transportation?
- _____ What technology do you use that has **artificial intelligence**? For example, does your phone recognize your voice and respond to your queries?
- _____ Why are writers, artists, and game developers all types of **creators**? What new things do they bring into existence?
- _____ Have you seen any art **exhibits** lately?
- _____ Why should parents **foster** rather than neglect a child's interest in art?
- _____ Do lights activated by **motion** improve safety?
- _____ What is most **noticeable** to you when you look at a piece of art? Is it the colors or the shapes?
- _____ How can **programmers** help museums become more up-to-date?
- _____ Does your phone use face or voice **recognition** as a security system?
- _____ Why do people **scroll** through social media posts throughout the day?

B With a partner, ask and answer five questions in activity A.

CRITICAL THINKING Use visual features to understand graphics

Information is often displayed visually rather than in text to make it clearer and easier to understand. To understand the relationship between ideas, use visual features such as lines and arrows that connect different pieces of information. To distinguish between important and less important ideas, look at features such as the size (of boxes/circles, font, etc.), color (bright, monotone), and position (top, middle, etc.) of different elements. Key information is often larger, brighter, and in the middle.

C APPLY Look at the infographic and discuss the questions with a partner.

- Which question is considered the most important? How do you know?
- Which questions are presented as less important? How do you know?

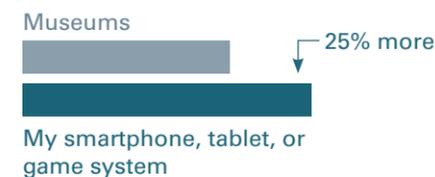
2018 MUSEUMS & TECH SURVEY + REPORT

New technology is changing the way museums display their collections and engage with the public. A survey of 500 Americans revealed some interesting data.

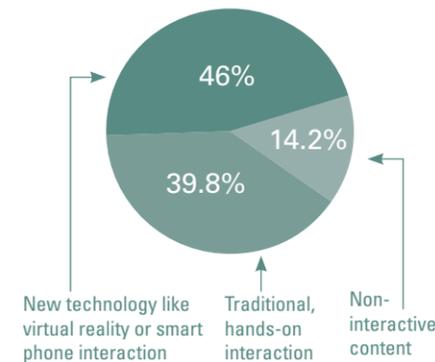
Did you take a mobile device on your last museum visit?

69% Yes 31% No

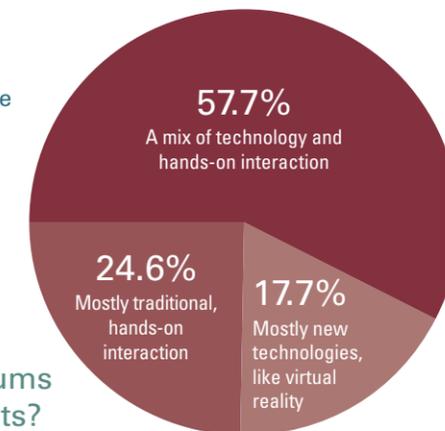
Where do you find more engaging experiences?



What is the best way museums can improve existing exhibits?



What types of interaction would you like to use in future museum exhibits?



What did you do on your mobile device at the museum?



Would you visit museums more often if you could use your phone to enhance exhibits?



REFLECT Interpret an infographic about technology and art.

You will listen to a lecture about technology and museums. Study the infographic about how museums use technology. With a partner, discuss the questions.

- How many visitors were surveyed and where were they from?
- Would visitors prefer mostly new technologies like virtual reality, mostly hands-on interaction, or a mix of the two in future exhibits?
- Which do people find more engaging—their electronic devices or museums?
- Answer the survey questions for yourself. Are you similar to other survey respondents?

MUSEUMS AND TECHNOLOGY

Artechouse in New York City, USA, displays an audio-visual installation by artist Julius Horsthuis.



A MAIN IDEAS Listen and take notes. Number the ideas in the order you hear them. 🗣️ 5.4

- a. _____ There are ways technology can personalize the museum experience for visitors.
- b. _____ One way museums make art more accessible is by putting digital images online.
- c. _____ Augmented reality, or AR, enhances the experience of the real artworks.
- d. _____ In a fully digital museum, artworks can flow and communicate with each other.
- e. _____ Virtual reality, or VR, provides a new, virtual way to experience the art.

B DETAILS Listen again. Match the museums with the uses of technology. 🗣️ 5.4

- | | |
|--|---|
| a. The Art Gallery of Ontario | 1. _____ has 380,000 images of its art online |
| b. The Cleveland Museum of Art | 2. _____ provides digital images that allow viewers to see tiny details |
| c. The ICER Innovation Center in the Netherlands | 3. _____ greets visitors with a wall displaying 4,000 images |
| d. The Louvre in Paris | 4. _____ uses facial recognition to personalize the experience |
| e. The Metropolitan Museum of Art in New York | 5. _____ uses artificial intelligence to answer queries |

- f. TeamLab Borderless in Tokyo
- g. The Pinacoteca de São Paulo in Brazil
- h. The Prado Museum in Madrid
- i. The National Museum of Singapore
- 6. _____ uses AR that lets visitors “catch” items on display
- 7. _____ uses AR to bring older paintings to life
- 8. _____ uses VR to show Mona Lisa and the world she lives in
- 9. _____ is a completely digital museum in a train station

C APPLY Listen and write the adverbs you hear at the beginning of the sentences. Choose the attitude that the adverb conveys. 🗣️ 5.5

- | | | |
|----------|----------------------------------|------------------------------------|
| 1. _____ | a. This is easy to understand. | b. This is surprising. |
| 2. _____ | a. This makes me curious. | b. This makes me sad. |
| 3. _____ | a. This is not good news. | b. This is good news. |
| 4. _____ | a. This is a positive situation. | b. This is a negative situation. |
| 5. _____ | a. This is easy to understand. | b. This is not easy to understand. |

PRONUNCIATION Consonant clusters 🗣️ 5.6

Many words in English have **consonant clusters**. A consonant cluster is a group of two or more consonant sounds with no vowels between them. If you don't pronounce the sounds as a cluster and instead add a vowel between the consonants, you may be misunderstood. Notice the difference:

We have **sports** at our school. We have supports at our school.
Please help me. Police help me.

D PRONUNCIATION Underline the clusters. Listen and check your answers. Then work with a partner to take turns saying one word in each pair. Your partner says which word they heard (a or b). 🗣️ 5.7

1. a. below b. blow
2. a. believe b. bleed
3. a. collapse b. claps
4. a. forum b. form
5. a. garage b. graph
6. a. parade b. Prado
7. a. police b. please
8. a. support b. sport
9. a. terrain b. train
10. a. thorough b. throw

E PRONUNCIATION Listen to the questions and choose the correct response. Then work with a partner to take turns asking and answering the questions. 🗣️ 5.8

1. I know you arrived late. Were you able to go to the parade/Prado though?
 - a. Yes, I loved watching all the people.
 - b. Yes, it's my favorite museum.
2. What was the terrain/train like?
 - a. It was very hilly.
 - b. It was fast and comfortable.
3. Did you hear the collapse/claps?
 - a. Yes, the whole building fell down.
 - b. Yes, everyone loved the performance.
4. How was the forum/form?
 - a. The speakers were very interesting.
 - b. It took a long time to fill it out.
5. What does *thorough/throw* mean?
 - a. It means *complete* or *accurate*.
 - b. It means *to propel with force through the air*.

UNIT TASK Review a piece of art.

You are going to describe a piece of art and explain why you like it. You will also use a visual to support your review. Use the ideas, vocabulary, and skills from the unit.

F MODEL Listen to the art review. Complete the chart. 🗣️ 5.9

Title and type of art, artist, background information	
Where and when the speaker saw it and how the speaker felt	
What the art shows	
What the art means to the speaker and how it makes her feel	



Under the Wave off Kanagawa, also known as The Great Wave, by Katsushika Hokusai

SPEAKING SKILL Describe a visual

When you describe a visual, such as a piece of art, be sure to include vivid, specific details. Consider:

- ▶ What colors are used?
- ▶ What is the overall mood or emotion?
- ▶ What is happening in the visual? What is the focus?
- ▶ What forms or shapes are used? How are they put together?
- ▶ What kind of lighting is there? Where does it come from?
- ▶ What is in the background?
- ▶ What materials are used?
- ▶ Are there any unusual or interesting features, such as size, position, or subject matter?

When showing the visual, use expressions to call attention to these features.

As you can see, . . . In the upper right-hand corner, . . . Now take a look at . . .
 If you look at the . . . In the background, . . . You'll notice . . .

G APPLY Complete the art review with the correct words and phrases from the box. With a partner, answer the questions from the Speaking Skill box about this piece of art.

are hanging	contemporary	if you look	mood	was captured
as you can see	Egyptian	metal	obviously	was created

One of my favorite pieces of art is a structure called *Horizontal*. It ¹_____ by Alexander Calder in 1974. Last year, I visited Paris. When I went to the Centre Pompidou, my interest ²_____ by the installation I saw outside. ³_____, the museum has many beautiful and amazing works of art, but this sculpture was my favorite.

Calder is known for his mobiles. Mobiles are sculptures with motion. ⁴_____, *Horizontal* has a solid ⁵_____ base in the center. The base is black and forms a pyramid. Across the top of the pyramid, metal bars extend like a *T* or arms. From each arm, colored shapes ⁶_____. They aren't exactly squares, or circles, or triangles. ⁷_____ at the red shape on the right, it looks a bit like a heart.

I like *Horizontal* because the ⁸_____ is playful, with its bright colors and simple shapes. It reminds me of a child's toy, though a very large one. Although it is a ⁹_____ style, the pyramid base makes me think of the ¹⁰_____ or Aztec cultures. When you look at it, your eye is drawn up to the colorful shapes that hang above you. It's like a child's version of a tree. I feel happy looking at it.



Horizontal by Alexander Calder

COMMUNICATION TIP

If you want to say what a general group of people think about something, use the passive in expressions like these:

*The painting **is thought to be** the artist's last completed work.*
*It **is believed that** the artist painted it in only three days.*

H APPLY Look at the pieces of art. Choose one and describe it to a partner. Use the questions in the Speaking Skill box to help you.

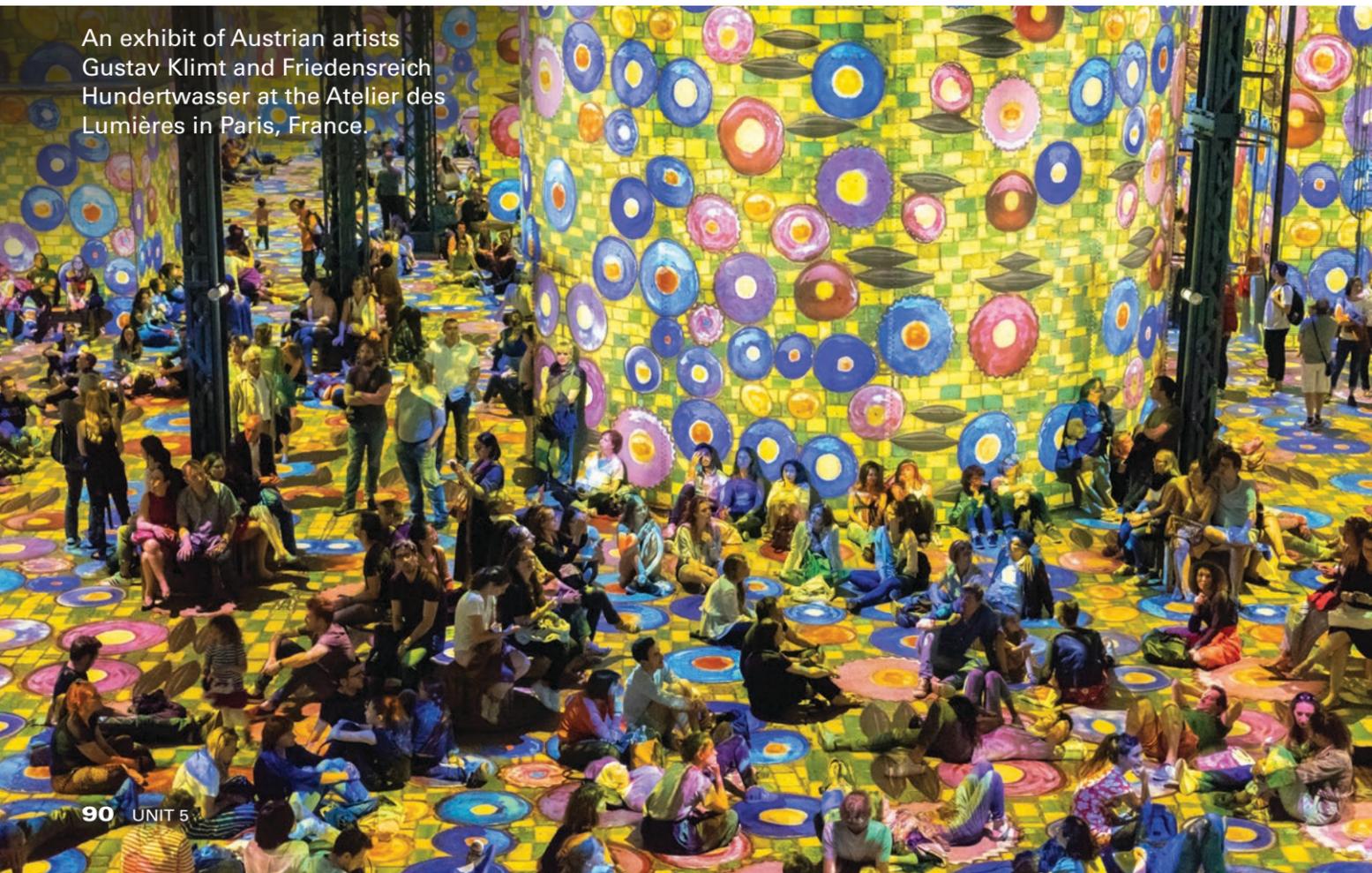


I PLAN Choose a piece of art you like. Complete the chart. If necessary, research details about the artist and materials online. Find an image of the art to show.

Title and type of art, artist, background information	
Where and when you saw it and how you felt	
What the art shows	
What the art means to you and how it makes you feel	

J PRACTICE Use your notes to prepare your review. Work with a partner. Take turns reviewing your artwork, making sure to refer to the visual as you describe it. Ask your partner whether your description matches your piece of art. Then revise your review as needed.

K UNIT TASK Work with a small group. Present your review. As you listen to other students, take notes. Whose reviews captured your interest? Which pieces of art did you like the best?



An exhibit of Austrian artists Gustav Klimt and Friedensreich Hundertwasser at the Atelier des Lumières in Paris, France.

REFLECT

A Check (✓) the Reflect activities you can do and the academic skills you can use.

- | | |
|--|---|
| <input type="checkbox"/> consider art preservation vs. reproduction | <input type="checkbox"/> listen for attitude |
| <input type="checkbox"/> weigh the pros and cons of art reproductions | <input type="checkbox"/> describe a visual |
| <input type="checkbox"/> interpret an infographic about technology and art | <input type="checkbox"/> review of the passive voice |
| <input type="checkbox"/> review a piece of art | <input type="checkbox"/> use visual features to understand graphics |

B Write the vocabulary words from the unit in the correct column. Add any other words that you learned. Circle words you still need to practice.

NOUN	VERB	ADJECTIVE	ADVERB & OTHER

C Reflect on the ideas in the unit as you answer these questions.

- How did the ideas in the unit change the way you view the role of technology in art or museums?

- What ideas or skills in this unit will be most useful to you in the future?
