

# Let It Snow!

## **WR News** talks to an award-winning snowflake expert.

Most people stay indoors during a snowstorm, but Kenneth Libbrecht is not most people. When flurries start drifting down from the sky, the scientist heads out into the cold. He takes his camera with him.

Outside, Libbrecht waits for snowflakes that are just right. Finally, he spots the glittery ice crystals he's been waiting for. As the snowflakes fall, Libbrecht catches them. Then he points his camera and shoots.



Kenneth Libbrecht

*Libbrecht caught these cool crystals on camera.*

The scientist's shiny snapshots recently earned him an award. The award is given to top science photographers around the world.

Libbrecht takes pictures of snowflakes to learn more about their shapes. The crystals form when **water vapor**, or steam, in a cloud freezes. Every snowflake grows into a **hexagon**. That is a six-sided shape. However, no two snowflakes look the same. Experts are not sure why.

To solve the mystery, Libbrecht has traveled to snowy places around the world. He has taken pictures of snowflakes in Canada, Alaska, and Vermont. He takes his research back to his science lab. That is in California.

Libbrecht has collected nearly 10,000 snowflake **images**, or pictures. He spends most of the winter studying them. The scientist's outdoor adventures are far from over, though. Libbrecht continues to journey to other snowy places to take more photos.

"I really enjoy ... watching the snow fall and trying to see what I can find," he told *WR News*.  
"It's a bit of a treasure hunt."

## Meet the Snow Man

Read to learn about scientist Kenneth Libbrecht's snowy side.



Kenneth Libbrecht

***WR News:*** How do you take pictures of snowflakes?

**Kenneth Libbrecht:** When I find a good one, I'll [catch it] using a little paintbrush. I then stick it under my microscope and take a picture.

***WR News:*** What advice do you have for kids who want to study snowflakes?

**KL:** You don't need a lot of fancy equipment. With a simple magnifying glass on a snowy day, you can really see quite a bit if you just stop and look.

# crystal    crys · tal

## Definition

### noun

1. a clear rock that has a regular shape. Diamonds and grains of salt are crystals.
2. glass of very high quality.

*That beautiful vase is made of crystal.*

## Advanced Definition

### noun

1. a naturally symmetrical or layered solid, such as diamond or quartz, with a regularly repeating three-dimensional atomic, ionic, or molecular structure.

*Grains of salt are crystals.*

2. any of numerous electronic devices, such as detectors or oscillators, that are made of crystals.
3. glass or glassware of exceptional quality and brilliance.

*That beautiful vase is made of crystal.*

4. the clear covering of a watch face.

*This crystal is so scratched I can hardly read the time.*

### adjective

1. made of or like crystal.

*A crystal chandelier hung from the ceiling.*

2. not obscured or clouded; transparent; clear.

*A crystal stream ran through the dense forest.*

## Spanish cognate

*de cristal*: The Spanish word *de cristal* means crystal.

---

## These are some examples of how the word or forms of the word are used:

1. At midnight, a bright **crystal** ball drops.

2. There was a big **crystal** in the middle of the room.
3. That arrangement of frozen bits of water creates a beautiful ice **crystal** or snowflake.
4. Those ices each have many different **crystal** structures too. The impact of a collision in space can transform the crystal structure of ice.
5. But once you've seen 10 white-sand beaches with **crystal** clear water and perfect waves, they all start to blend together. I never used to understand why people who grew up on tropical islands in the Caribbean wanted to move to cities like Los Angeles or New York.
6. Ever since Bart was born, their family had been coming to Lake Wenatchee, a **crystal** blue sheet which stretched as far as the eye could see. Ever since Bart was born, they had stayed in the same cabin, a musty old wreck just steps from where the water met the gritty beach.
7. He bends down to grab the hand of a man standing below, who has his arms stretched high over his head and still does not reach the **crystal**. The crystal formations make the cavern's floor look as if it were covered in ice, and the ceiling's mix of rock and crystal makes it look like diamonds tossed into a chocolate cake.

# expert ex · pert

## Definition

### noun

1. someone who knows a great deal about a particular thing.

*He is an expert on the history of the American West.*

## Advanced Definition

### noun

1. one who is very skilled in or knowledgeable about a particular thing.

*He is an expert on the history of the American West.*

*You should call in an expert to help you with your computers.*

### adjective

1. very skilled or knowledgeable.

*Our riding coach is an expert horseman.*

*This furniture was made by an expert craftsman.*

2. of or pertaining to special skills or knowledge.

*She gave us expert help with our project.*

*We need some expert advice on how to sell our product.*

## Spanish cognate

*experto*: The Spanish word *experto* means expert.

---

## These are some examples of how the word or forms of the word are used:

1. He practiced tennis all summer and became an **expert** by the end, winning every match.
2. As an **expert** in minerals, Hazen is intrigued by the mineral-rich worlds around deep-sea vents.
3. At the meeting, the Mayor presented three **experts** who had different ideas about solving the problem.
4. Scientists are excited about the discovery because they don't know much about the Mayas' daily lives, explains Michael Coe. He is an **expert** on the Mayas.
5. Despite these hints, **experts** were clueless about the cause of diabetes and how to treat it. Doctors prescribed exercise and various diets. However, nothing helped the patient live more than a year.
6. Many recent studies have tried to explain how music and learning go together. Don Campbell, an **expert** on the powers of music, believes music can make people—even babies—more creative, smarter, healthier, and happier.

# image im · age

## Definition

### noun

1. a picture of a person or thing.

*The dollar bill has an image of George Washington.*

## Advanced Definition

### noun

1. a visual representation of something such as can be seen in a photograph, sculpture, or painting.

*The dollar bill has an image of George Washington on one side of it.*

2. a mental picture.

*He tries to project an image of himself as a bold and innovative leader.*

*I have only a faint image of my father.*

*The image in my mind of the place was much more beautiful than the reality.*

3. a reflection of something, as in a mirror.

*I saw my own image in the mirror.*

4. a duplication or replica.

*She is the image of her mother when she was a young girl.*

5. a picture in writing or speech.

*The author used words that created a clear image of what the castle looked like.*

6. a nearly perfect embodiment.

*He is the image of wit and good humor.*

### transitive verb

1. to represent in a picture, sculpture, or the like.
2. to picture in the mind or portray in words.
3. to reflect in a mirror.

## Spanish cognate

*imagen*: The Spanish word *imagen* means image.

### These are some examples of how the word or forms of the word are used:

1. Older cameras record the **image** on film.
2. Previously, people might have seen her **image** in hand-painted portraits.
3. Once the **image** is permanent, it can be seen and enjoyed by many people.
4. Newer digital cameras record the **image** on an electronic storage device such as a memory card.
5. Like the eye, it takes in rays of light reflected from an object. It then focuses the rays into an **image**. Older cameras record the image on film.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. What does Libbrecht use a paintbrush for when he is photographing snowflakes?

- A. He uses a paintbrush to paint snowflakes.
- B. He uses a paintbrush to make snow shapes.
- C. He uses a paintbrush to catch snowflakes.
- D. He uses a paintbrush to draw on his camera.

2. What does the text describe?

- A. how images are captured by cameras
- B. how a snowflake forms
- C. Libbrecht's education
- D. different examples of science photography

3. *Weekly Reader News* asked Kenneth Libbrecht what advice he has for kids who want to study snowflakes. This was his reply:

"You don't need a lot of fancy equipment. With a simple magnifying glass on a snowy day, you can really see quite a bit if you just stop and look."

Based on his reply, what might Libbrecht think about studying snowflakes?

- A. He thinks it is a mysterious experience.
- B. He thinks it is a boring experience.
- C. He thinks it is relatively easy.
- D. He thinks it is relatively hard.

4. Read the following quote from Kenneth Libbrecht: "I really enjoy watching the snow fall and trying to see what I can find. It's a bit of a treasure hunt."

Why does Kenneth Libbrecht use the phrase "treasure hunt"?

- A. to suggest he is looking for something hidden
- B. to suggest he is searching for something valuable
- C. to suggest he wants to find snowflakes made of gold
- D. to suggest he just really enjoys what he does



5. The primary purpose of this passage is to describe

- A. the best pictures ever taken of snowflakes
- B. the places around the world with the most snow
- C. the reasons that no two snowflakes look alike
- D. the work of a scientist who studies snowflakes

6. What has Libbrecht done to learn why no two snowflakes look the same?

---

---

---

7. What word might the author use to describe Kenneth Libbrecht? Be sure to explain your answer with evidence from the text.

---

---

---

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Kenneth Libbrecht plans to visit lots of snowy places \_\_\_\_\_ he wants to take more pictures of snowflakes.

- A. but
- B. although
- C. if
- D. because

9. Use the word "expert" in a sentence.

---

---

---