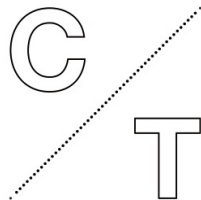


change over time

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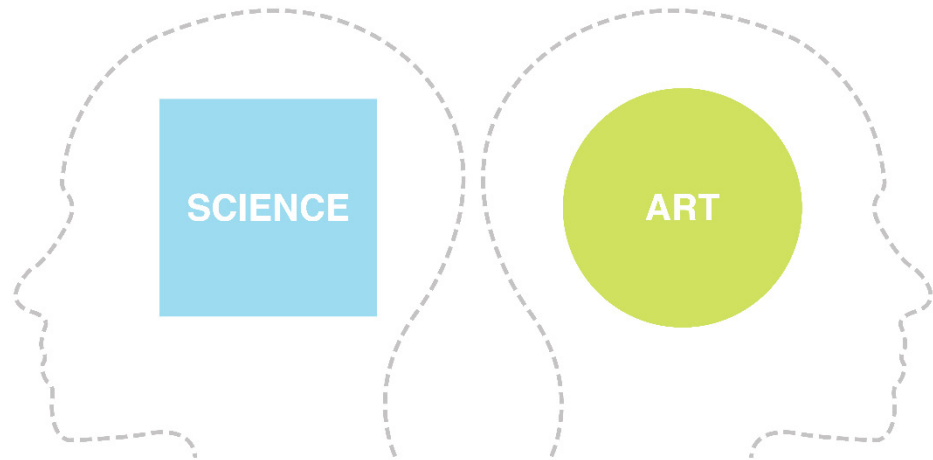


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Science and Art.

We call on educators to teach art through science and science through art.

To create bold thinkers through teaching problem-solving and logic.

To innovatively use familiar and accessible materials and to encourage students to see value in their use.



Change Over Time Mission.

To design a project-based learning kit that empowers fourth grade students to showcase the marriage of art and science through paper art projects and time-lapse videos.

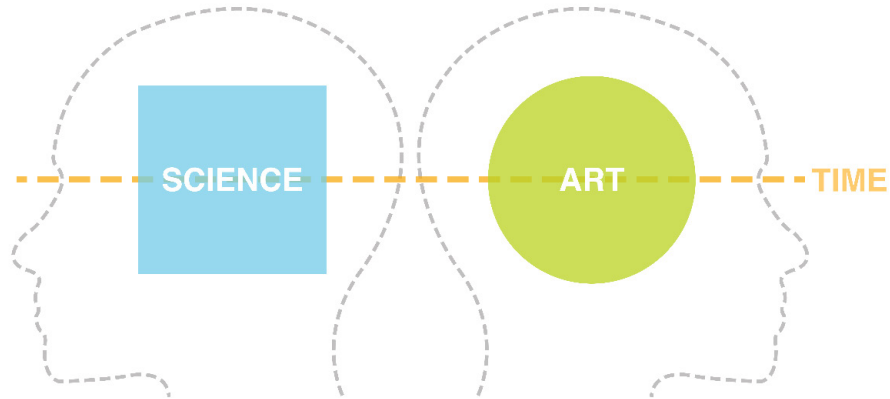


Change Over Time Curriculum Abstract.

Change Over Time is designed to supplement fourth grade science curriculum by addressing different kinds of change over time. With a focus on the process of inquiry, this product complements both fourth grade Science Standards of Learning and Art Standards of Learning.

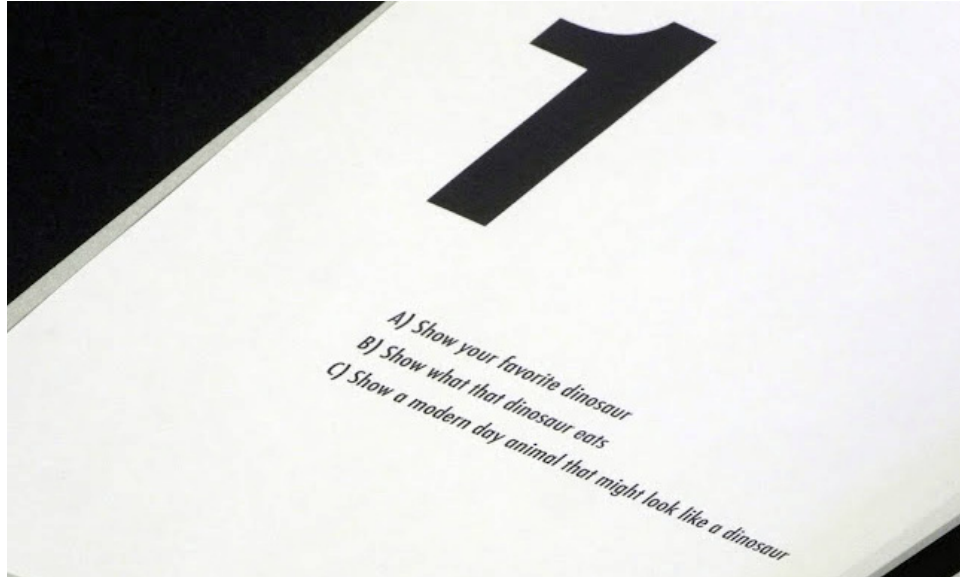
Students visualize and model change by manipulating paper and documenting the physical change. Students initially focus on the processes of fluency and originality as they brainstorm and make inferences in response to prompt cards. The prompt sheets display a series of science related concepts that align with the fourth grade science curriculum. The students then visualize that concept by sculpting a piece of paper to represent it. Students finish by describing their creations and documenting their process through a time-lapse video.

Students will use critical thinking skills to creatively model science concepts. In addition, students will practice effective communication skills and learn to work successfully in a collaborative environment with other students.



Student Objectives.

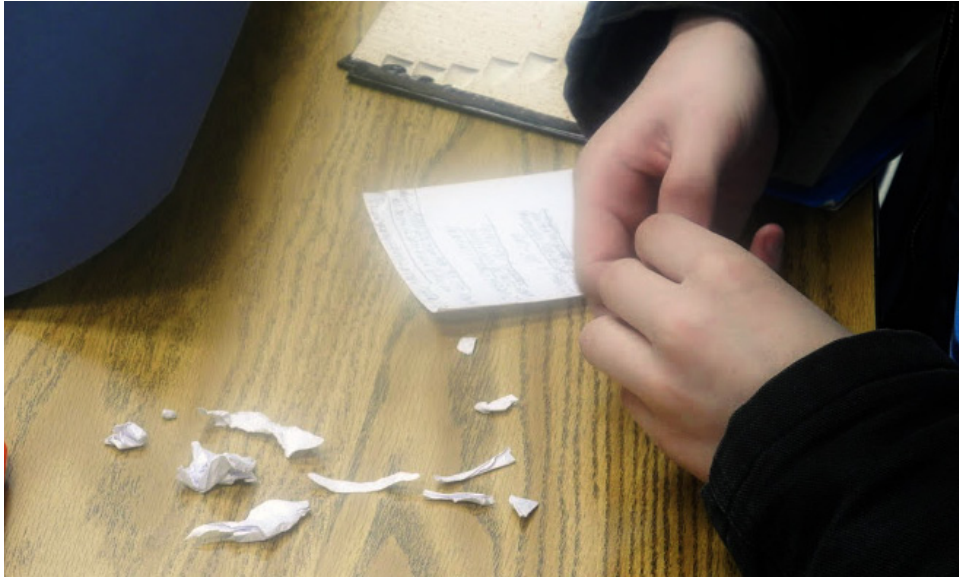
- Students will use science vocabulary.
- Students will recall science concepts.
- Students will manipulate paper to represent an abstract idea.
- Students will justify paper art sculpting using one complete sentence.
- Students will create original works of art.
- Students will work under time restrictions.
- Students will take photos using an iPod Touch.
- Students will create a time-lapse video documenting the process.
- Students will finalize and present a video demonstrating their process.



Think Ahead.

Before students enter the classroom, set up each of the materials for the groups. We suggest having three to four students per group. However, the session can be adapted to accommodate more students if needed. Each group should have the following:

- A charged iPod Touch with the app iMotion HD already installed.
- iMotion HD app direction card.
- Change Over Time student direction card.
- A black backdrop for photos.
- Enough pieces of 4" x 6" white paper for each student to have his or her own piece (but no more!).
- A prompt sheet - either one that is provided in the kit or one that you make yourself using the template included.



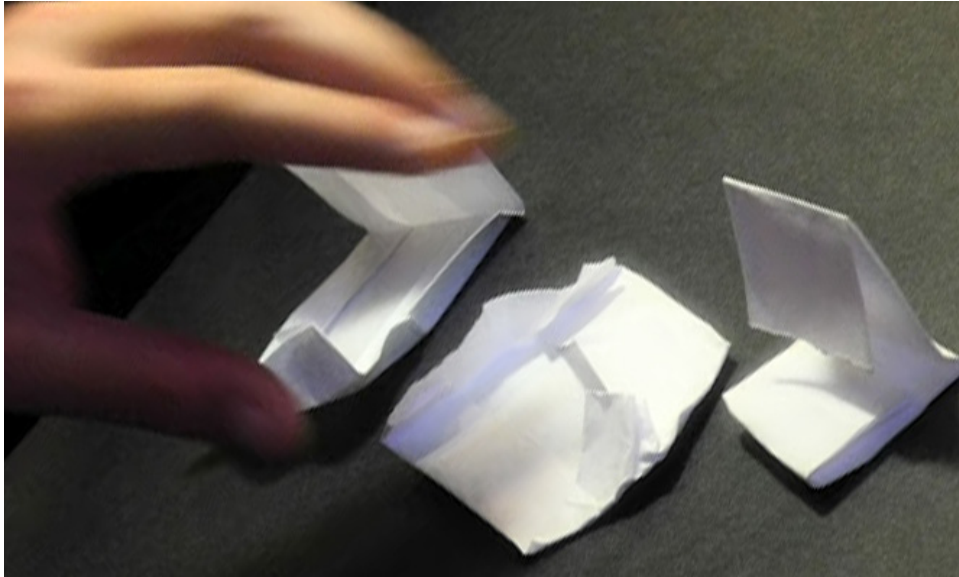
What To Do.

Have the students visualize each prompt by using only the one piece of paper. Each prompt should take two minutes - time it! After each prompt is complete, have the students justify and document their work by:

- Writing a few sentences to explain their paper sculpture.
- Taking a picture with the iMotion HD app on the iPod

Rotate the groups to new stations as time permits. Students can sculpt, tear, and fold. However, don't give any hints, this could inhibit creativity. The only rules are:

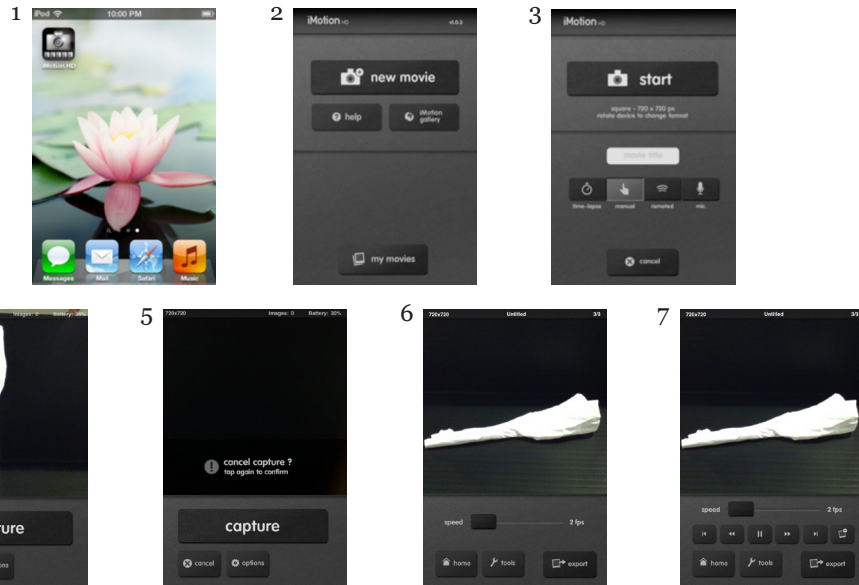
- Use the same piece of paper.
- Use all of the paper.
- Be original!
- There are no right or wrong answers.



What Makes a Good Photo.

Remind students that a good photograph can make a difference in the documentation of their work. Some points to consider are:

- Hold the iPod steady to take a clear, crisp photo. Moving the iPod in camera mode will cause the photo to be blurry. Have students try bracing their elbows against their bodies to help steady their hold on the iPod.
- Take the photo from the same angle everytime. This will keep each of the photos in the series consistent.



Using the iMotion HD iPod App.

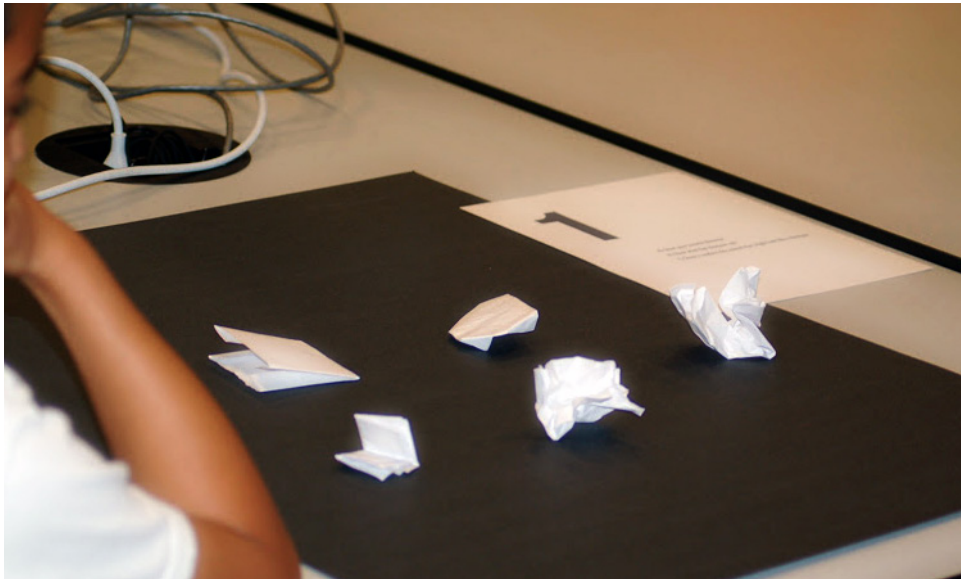
1. Find and press the iMotion HD icon.
2. Select “new movie”.
3. Make sure manual is selected for options shown towards the bottom of the screen. Enter a movie title if desired. Press start to begin capturing videos.
4. Position the iPod until the screen is in the desired area and press the capture button to take a picture of the art. **Don’t press the stop button until you are finished with the video series.**
5. After capturing the number of desired images, press the stop button twice to stop capturing images.
6. The app will create a time-lapse video. To share the video, press the export button and select a method of sharing.
7. To delete a frame from the movie, press the tools button to display the tool interface. Use the rewind or forward options to reach the desired image to delete. Press the delete button (the icon of a polaroid picture with a minus sign) to remove the frame.



Reflection.

Wrap up the session by starting a class conversation on the Change Over Time process. Some sample questions are:

- What happened to the paper as you continued to use it over and over again?
- What do you think would happen to the paper if you continued to fold it?
- Can you think of other examples of objects that change over time?



Assessment.

You can use the following checklist to help assess your students' progress.

Strongly Agree **[SA]** -- Agree **[A]** -- Disagree **[D]** -- Strongly Disagree **[SD]**

Student used science vocabulary and concepts	
Student followed prompts on prompt sheets	
Student finished the activity on time	
Student paper art project was original	
Student followed directions to complete the stop-motion video	
Student presentation showcased his/her work	



Change Over Time Complements Science.

Change Over Time (C/T) is designed to supplement fourth grade science curriculum by addressing various instances of change over time.



National Science Standards.

Change Over Time addresses the following National Science Standards, K-4 Standards.

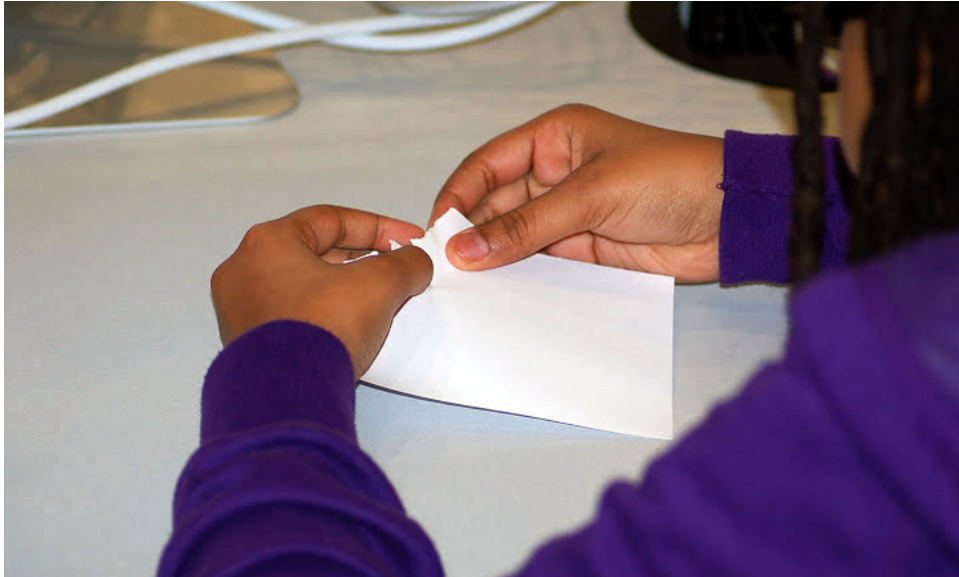
- A Scientific inquiry.
- B Physical sciences.
- C Life sciences.
- D Earth sciences.
- E Science and technology.



Virginia Science Standards of Learning.

Change Over Time addresses the following Virginia Science Standards for learning.

- 4.1 The student will plan and conduct investigations.
- 4.4 The student will investigate and understand basic plant anatomy and life processes.
- 4.5 The student will investigate and understand how plants and animals in an ecosystem interact with one another and the nonliving environment.
- 4.6 The student will investigate and understand how weather conditions and phenomena occur and can be predicted.



Change Over Time Complements Art.

Students visualize and model change by creating paper sculptures. Initially, students focus on the processes of fluency and originality through brainstorming and making inferences in response to words or phrases listed on the prompt sheets.

Next, students transition to analyzing and synthesizing as they manipulate the paper, combining prior knowledge of science concepts with creative thinking.

Lastly, students finish by evaluating their paper sculptures and documenting their process through a time-lapse video using an iPod Touch and iMotion HD app.



National Art Standards.

C/T addresses the following National Art Standards K-4 Standards.

- #1 Understanding and applying media, techniques, and processes.
- #2 Using knowledge of structures and functions
- #3 Choosing and evaluating a range of subject matter, symbols, and ideas.
- #5 Reflecting upon and assessing the characteristics and merits of their work and the work of others.
- #6 Making connections between visual arts and other disciplines.



Virginia Art Standards of Learning.

C/T addresses the following Virginia Visual Arts Standards of Learning.

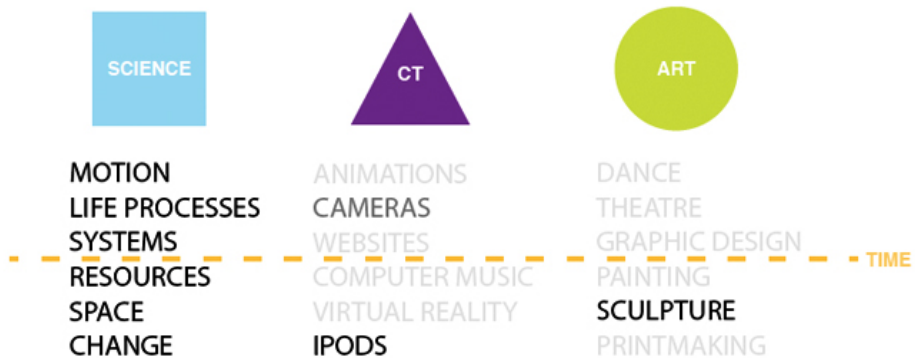
- 4.1 The student will research and generate ideas for creating works of art, using discussion.
- 4.10 The student will create abstract works of art.
- 4.18 The student will analyze works of art based on visual properties.



Virginia English Standards of Learning.

C/T addresses the following Virginia English Standards of Learning.

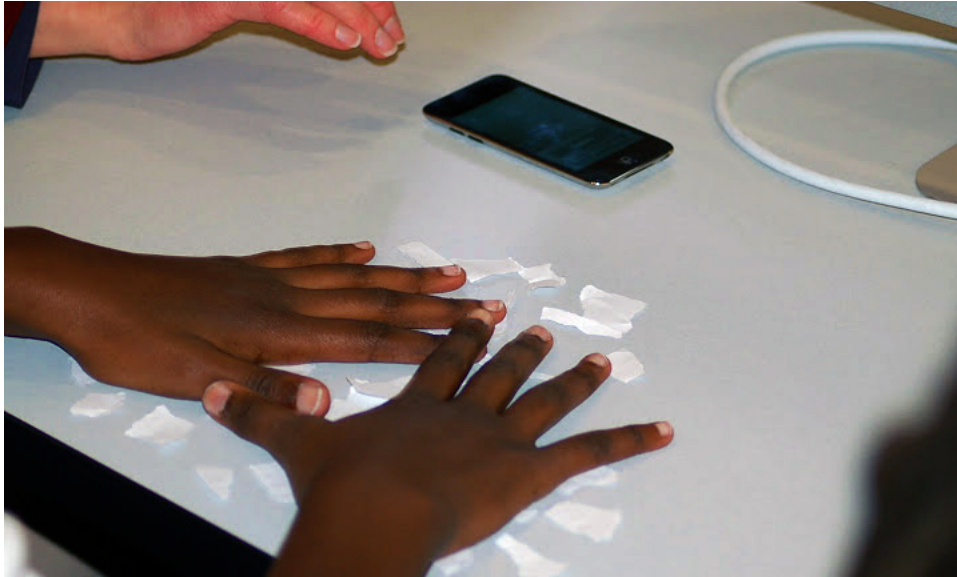
- 4.1 The student will use effective oral communication skills in a variety of settings.
- 4.2 The student will make and listen to oral presentations and reports.



Change Over Time Rationale.

Change Over Time supports the vision of bridging the arts and sciences. Students create art and recall science concepts, and also relate their understanding of time and change to art and science.

The larger goal of Change Over Time is for students, through engaging in the processes of creative and critical thinking, to experience art and science informing each other, on a level that makes sense to them.



Further Expansion.

The Change Over Time project has been successfully implemented into a variety of scenarios. So, there's room for expansion! Here are some ideas.

- Make your own prompt cards. This can be to expand upon science topics or to address other subjects.
- Align the reflection questions to the content that is currently being explored in the class.

For more ideas and resources, see the Change Over Time website.



Remember the Rules.

- Use the same piece of paper.
- Use all of the paper.
- Be original!
- There are no right or wrong answers.



Engage!

Read the first prompt out loud. Everyone at this station should be working on the same prompt.



Visualize!

Show us what's in your head by sculpting with your paper. You will have two minutes to visualize the prompt.



Capture!

After the two minutes are up, take a photo of your paper art using the iPod Touch. Everyone at your station should line up his/her paper sculpture on the black background. Remember the order, because this is how each future photo should be taken. Document your thoughts by writing a few sentences about your sculpture.

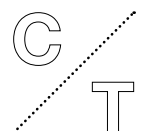


Repeat!

Repeat these steps until your group has completed each of the prompts at that station. Wait for your teacher to tell you which station to go to next. Take your paper and your iPod with you and start over again!

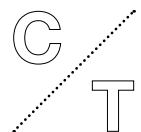
1

- A) Show your favorite dinosaur
- B) Show what that dinosaur eats
- C) Show a modern day animal that might look like a dinosaur



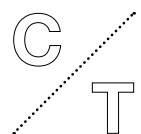
2

- A) Show rain
- B) Show the sun
- C) Show the water cycle



3

- A) Show a seed
- B) Show what a plant needs to grow
- C) Show a growing plant

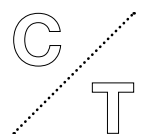


4

A) Spring / Summer

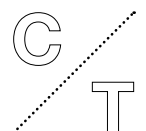
B) Fall

C) Show Winter



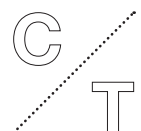
5

- A) Art
- B) Sound
- C) Technology



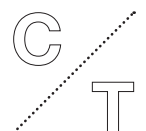
1

- A) Verb
- B) Noun
- C) Adjective



2

- A) Adverb
- B) Pronoun
- C) Preposition

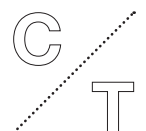


3

A) Conjunction

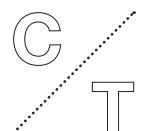
B) Interjection

C) Exposition



4

- A) Expression
- B) Narrative
- C) Persuasion

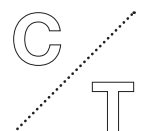


5

A) Symbol

B) Thesis

C) Theme

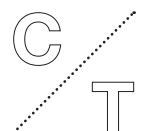


6

A) Imagery

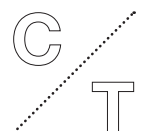
B) Idiom

C) pun



7

- A) Personification
- B) Onomatopoeia
- C) Oxymoron

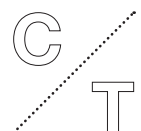


8

- A) Simile
- B) Metaphor
- C) Allusion

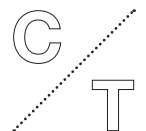
9

- A) Foreshadow
- B) Flashback
- C) Predict



10

- A) Infer
- B) Imply
- C) Inflection

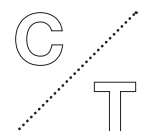


11

A) Projection

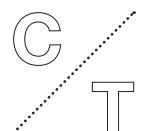
B) Analogy

C) Contrast



12

- A) Diction
- B) Dialogue
- C) Dialect

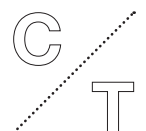


13

A) Protagonist

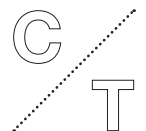
B) Antagonist

C) Conflict



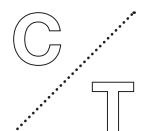
14

- A) Plot
- B) Setting
- C) Climax



15

- A) Static
- B) Dynamic
- C) Analyze



- A)
- B)
- C)

C
T