Siscovery

CELEBRATE PI DAY WITH DISCOVERY EDUCATION

Find lesson starters, activities, and jokes to kick off your classroom's math fun.

JOIN THE FESTIVITIES!

This Pi Day, you're invited to join us for a Virtual Party connecting classrooms all across the country in celebration of all things Pi!

Math lovers from all over the world unite each year on March 14 (3/14, or 3.14 for those so inclined) to recognize this most illustrious irrational number. The annual celebration normally involves making pies, eating pies, or throwing pies, but at Discovery Education's celebration, there's no need to get messy.

HOW TO JUMPSTART YOUR PI DAY

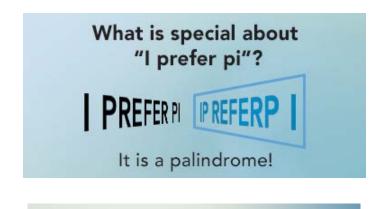
Print this document which contains several Pi-themed lesson starters, divided by grade level:

- Grades K-5 (Pgs 2-3)
- Grades 6-8 (Pgs 4-5)
- Grades 9-12 (Pgs 6-7)

SHARE IN THE FUN ONLINE

Keep an eye on our <u>Twitter</u> and <u>Facebook</u> pages on Pi Day. We'll be sharing free lesson plans, activities, trivia, and jokes all around the significance of the number Pi in mathematical research and its everyday applications.

Look for trivia and jokes like these, starting 3/14:



Did you know ...?

Pi Day (3/14) is also Albert Einstein's birthday?



Lesson Starters Letters, Words, and Books



Grade Level: K–5

Subject: English/Language Arts

Content Collection: Literacy

Instructional Strategy: Reminds Me Of

Possible Learning Objectives

- Identify the letters of the alphabet.
- Describe programs that encourage children around the world to read.
- Discuss how reading and writing are necessary for communication.
- Explain what adjectives are and what they do.
- Define and use key terms such as *adjective*, *alphabet*, *literacy*, *noun*, and *verb*.

Teacher Notes

For Starters...

Ideas from DE to Kickstart Learning

Ses Reminds Me of the Alphabet

As a warm-up activity, ask students to draw a picture of one thing they know about the alphabet. Students can draw single letters or groups of letters. Share and discuss students' drawings. Play the video segments "The First Letters of the Alphabet," "The First Word," and "The Alphabet Is Whole." As students watch the video segments, direct them to put their hands on their heads if they hear something new they learned about the topic. You can instruct younger students to put their hands on their heads when they see a letter or word they recognize. Pause the video segments when you see a student with hands on his or her head and discuss what he or she learned. When the segments end, have students write letters, words, or pieces of information they learned from the segment, based on grade level. Select several student examples and model how to connect known information to new information.

3 Truths...1 Lie about Adjectives

Preview the video segment "The Adjective Song." Create three true statements and one lie based on the segments. These statements could be phrases, three of which include adjectives and one of which does not. An example would be: Adjectives are words that describe nouns (truth); you cannot describe the feel of a noun (false); you can describe time with adjectives (truth); and there are hundreds of adjectives to choose from (truth). Display the three truths (or adjective-containing phrases) and one lie (or phrase with no adjective) to students. Read the statements aloud for younger students. Ask them to tell a partner which one they believe is the lie (or does not contain an adjective) and why. Explain to students that they will be watching a video segment that will reveal the truth. They will need to support their responses with evidence from the segments. Play the video segment "The Adjective Song" for students and pause intermittently to allow students to take notes. Younger students can draw

pictures. When the video segment is complete, have students work with partners or in small groups to discuss which statements are true and which is a lie, providing supporting evidence for each. To conclude the activity, come together as a class to discuss students' conclusions and the evidence they found to support them.

PMI: Books for Everyone

Introduce this strategy to your students by providing them with a sample PMI chart and explaining that they will take notes during two video segment as follows: P ("Plus"): things they like; M ("Minus"): things they do not like; and I ("Interesting"): something they find intriguing. Explain to students that they will draw a PMI chart and categorize their feelings about ideas from the video segments using the chart. Alternatively, you can draw a PMI chart at the front of the room and record student responses for younger students. Play the video segments "United States: Children's Book Week" and "Kenya and the United Kingdom: Books for Africa," pausing a few times to provide students time to take notes. Younger students can write words or phrases or draw pictures. After students have watched the video segments, facilitate a group discussion and have students share what they put in each column. Optionally, students can present the information in their columns in Board Builder, adding media elements to support their ideas.

Target Vocabulary*

- adjective a word that says something about a noun or pronoun
- alphabet the letters of a language arranged in their usual order
- audience the people who watch read, or listen to something
- edit to make changes, correct mistakes, etc., in (something written)
- **explicit** very clear and complete : leaving no doubt about meaning
- genre a particular type or category of literature or art
- implicit understood although not clearly or directly stated
- literacy the ability to read and write
- **noun** a word that is the name of something (such as a person, animal, place, thing, quality, idea, or action) and is typically used in a sentence as subject or object of a verb or as object of a preposition
- prewriting the formulation and organization of ideas preparatory to writing
- **revise** to make changes especially to correct or improve (something)
- **style** a distinctive manner of expression (as in writing or speech)
- theme the main subject that is being discussed or described in a piece of writing, a movie, etc.
- tone a quality, feeling, or attitude expressed by the words that someone uses in speaking or writing
- **verb** a word (such as *jump, think, happen*, or *exist*) that is usually one of the main parts of a sentence and that expresses an action, an occurrence, or a state of being

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Lesson Starters Pi Is a Ratio



Grade Level: 6–8

Subject: Mathematics

Content Collection: Pi Day

Instructional Strategy: 3 Truths...1 Lie

Possible Learning Objectives

- Identify Pi Day as a day set aside for the celebration of the mathematical symbol π (pi).
- Describe π (pi) as the ratio of the circumference of a circle to its diameter.
- Discuss the importance of pi to the understanding and use of circles in mathematics and everyday life.
- Explain some of the uses of pi at the National Institute of Standards and Technology (NIST).
- Define and use key terms such as *circle*, *circumference*, *constant*, *decimal*, *diameter*, *pi*, *ratio*, and *symbol*.

Teacher Notes	

For Starters...

Ideas from DE to Kickstart Learning

Ses Pi: 3 Truths...1 Lie

Preview the encyclopedia article "Pi" from Discovery Education Streaming. Create three true statements and one false statement based on the content of the article (examples include: Pi is a ratio (true), Pi is used to calculate the area of a circle (true), Pi is an irrational number (true), Pi first became popular in ancient Greece (false). Display all four statements to students. Ask students to tell a partner which statement they believe is the false one and why. Explain to students that they will be reading an article that will reveal the truth. They will need to support their responses to the statements with evidence from the selection. Provide students with copies of the article and instruct them to read and take notes. When they are done reading, have students work in small groups to discuss which statements were true and which was false. Remind students to provide supporting evidence from the article for each response. Have students share the highlights of their discussion with the class.

20 Questions

Draw circles of different sizes and post them around the classroom. For each circle, develop a higher-order inquiry question that will encourage students to ask more questions as they attempt to answer the provided question. For example, you might pose the question, "How is this circle similar to and different from all of the other circles here?" or "Does the term perimeter apply to a circle? Why or why not?" Play the video segment "Circles" from Standard Deviants Teaching Systems: Fundamental Math: Module 04: Angles, Polygons, and Circles for students. Afterward, explain to students that they will view some circles around the class. Have the students move around the room and take a moment at each circle to think of questions they may have about the question that you asked. Ask students to write their questions in a notebook. Continue until all of the students have had a chance to see each circle and its related question. Come together as a group and have the students share the questions they

created. Have students post their collective questions around the classroom, or share on a website so that your class will be able to refer to the ideas throughout the unit.

Pi and NIST

After students have viewed one or more video segments focused on the National Institute of Standards and Technology (such as "Standard Kilogram" or "3-D Data"), ask them to answer the following questions: What is the National Institute of Standards and Technology? What is some of the work it does? How does the mathematical constant π (pi) figure into the work? How does the work that it does impact our everyday lives? Discuss the answers together as a class. Then, invite students to work in pairs to complete further research about NIST. Encourage students to narrow their focus—they may wish to find out more about NIST history, its mission and programs, its organization and locations, or its role in standards for weights and measures. Then have pairs work in Board Builder to create a print ad for NIST. Instruct students to choose several facts they have learned about NIST to create a visually interesting and informative advertisement for the laboratory. Challenge them to refer to pi somewhere in their ad. After their work is complete, have students share and explain their advertisements with the group.

Target Vocabulary*

- circle a perfectly round shape
- **circumference** the perimeter of a circle
- **constant** staying the same, not changing; a quantity or number whose value does not change
- decimal based on the number 10
- **diameter** a straight line from one side of something (such as a circle) to the other side that passes through the center point
- pi the symbol π denoting the ratio of the circumference of a circle to its diameter
- ratio the relationship that exists between the size, number, or amount of two things and that is often represented by two numbers
- **symbol** a letter, group of letters, character, or picture that is used instead of a word or group of words

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Lesson Starters Understanding and Analyzing Literature



Grade Level: 9–12

Subject: English/Language Arts

Content Collection: Literacy

Instructional Strategy: Tweet, Tweet!

Possible Learning Objectives

- Identify the steps in the writing process, such as first draft and second draft.
- Describe things to consider when writing for a particular audience, such as purpose.
- Discuss how to revise and edit the first draft of a piece of writing.
- Explain genres of writing.
- Analyze components of literature to consider when evaluating and responding to a piece of writing.
- Define and use key terms such as *audience, edit, explicit, genre, implicit, literacy, prewriting, revise, style, theme,* and *tone.*

Teacher Notes	

For Starters...

Ideas from DE to Kickstart Learning

Ses Tweet, Tweet! Revising

Introduce this activity by reviewing the elements of a tweet. Review the username, also known as a "handle," and brevity, since tweets are limited to 140 characters in length. You can also introduce the hashtag or "tweet at" so that students can make more connections between ideas. Provide each student with at least three sticky notes and ask them to determine their "handle" and write it at the top of each note. Play the video segment "Revising to Improve." From 0:58 to 3:34, pause occasionally to allow students to "tweet" a suggested revision on their sticky notes. Have students post their sticky notes around the room, then have students participate in a gallery walk and create reply tweets to at least three other students using new sticky notes. After students have completed their gallery walk and reply tweets, play the video segment from 3:35 to the end. Students can compare their suggestions and those of their classmates to the suggestions given in the video segment.

Blurt Out: Genres

Preview the video segment "Types of Writing" and write essential questions for learning. Essential questions could be: Why are genres and subgenres important? Some genres are very similar except for one characteristic, what makes that one characteristic so important (i.e., parody and satire)? How do genres transcribe to real-life events (such as Animal Farm)? Display essential questions while explaining to students that they will be looking for evidence to support their answers to the questions while watching a video segment. Pause the video segment throughout to allow students to brainstorm and record facts in their notes. Following the segment, distribute three index cards to each student. Students will use these to write questions about the video segment to try to stump their classmates. Review the questions and add some of your own as needed. Play "Blurt Out" by dividing the class into two teams and having a member from each team sit in a chair at the front of the room. Ask a question from the index cards. If one of the players knows the answer, that player blurts it out, earning a point. If the player does not know the answer, the other player gets a chance to answer. If neither knows the answer, no one receives a point. Repeat the questions and answers after they are blurted out, giving the students time to jot down the answers in their notes. The team with the most points wins.

Elements of Literature Vocabulary Stepping Stones

Before class, watch the video segment "Responding to Literature" and select 10 to 15 vocabulary words that are important for understanding the content (for example, *alliteration, allusion, conflict, figurative language, imagery, interpretation, irony, mood, onomatopoeia, style, symbolism,* and *theme*). Print enough copies of your selected vocabulary list for every student to have a copy. Distribute copies of the vocabulary list. Have students cut out the words and mix them up. Engage students in vocabulary development activities to review terms, such as a class discussion. In small groups, have students share and review the words and their meanings. You can also use this time to clear up any student misconceptions about word meanings. Explain to students that as the video segment plays, they will work with a partner to place the vocabulary words in order as they are heard in the segment. Play the video segment "Responding to Literature." After the video segment concludes, have students discuss the sequence of topics from the segments, using the order of the vocabulary words, and discuss how they were used in context. Students can create a display of vocabulary words from this activity, providing an example of each, in Board Builder.

Target Vocabulary*

- adjective a word that says something about a noun or pronoun
- alliteration the use of words that begin with the same sound near one another
- allusion an implied or indirect reference, especially in literature
- alphabet the letters of a language arranged in their usual order
- audience the people who watch, read, or listen to something
- **conflict** the opposition of persons or forces that gives rise to the dramatic action in a drama or fiction
- edit to make changes, correct mistakes, etc., in (something written)
- explicit very clear and complete: leaving no doubt about meaning
- genre a particular type or category of literature or art
- **imagery** language that causes people to imagine pictures in their mind
- implicit understood though not clearly or directly stated
- interpretation the way something is explained or understood
- irony the use of words that mean the opposite of what you really think, especially in order to be funny
- literacy the ability to read and write
- mood a conscious state of mind or predominant emotion; the expression of mood especially in art or literature
- **noun** a word that is the name of something (such as a person, animal, place, thing, quality, idea, or action) and is typically used in a sentence as subject or object of a verb or as object of a preposition
- **onomatopoeia** the creation of words that imitate natural sounds
- prewriting the formulation and organization of ideas preparatory to writing
- revise to make changes especially to correct or improve (something)
- **style** a distinctive manner of expression (as in writing or speech)
- symbolism the use of symbols to express or represent ideas or qualities in literature, art, etc.
- theme the main subject that is being discussed or described in a piece of writing, a movie, etc.
- tone a quality, feeling, or attitude expressed by the words that someone uses in speaking or writing
- **verb** a word (such as *jump, think, happen*, or *exist*) that is usually one of the main parts of a sentence and that expresses an action, an occurrence, or a state of being

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