Inference Skill Check

Making Inferences · Grades 9–10 · Try 1

Name or code _____ Date _____

Read each passage and circle one answer for each question.

Passage 1 · A Larger Picture

1 A picture can become larger without containing a more detailed record of the ground. Enlarging a satellite image changes its display. It does not send the original sensor back over the same place. The squares on a screen and the distinctions captured by an instrument are related, but they are not the same thing. Reading an image begins with asking which question the recorded information can answer.

2 NASA researchers distinguish the grid of pixels delivered in an image from a sensor’s ability to resolve spatial detail. An image can be arranged on a finer grid without changing the original sensor’s resolution. More grid squares therefore do not necessarily mean more separately observed features. A smooth-looking enlargement may make a display easier to view while leaving the information behind a boundary uncertain.

3 Consider a student group comparing two images of a playing field. The group wants to know whether a narrow strip beside the fence was paved when the earlier image was recorded. On that image, the strip, fence and nearby grass blend into a broad band. A student enlarges the image until the band fills the screen. The enlarged band has more visible squares, but no clear boundary separates its possible parts.

4 Another student proposes counting the dark squares as paving. A third asks to see the original image, its date and information about how it was captured. The enlarged display remains useful for locating the band, but choosing a color does not establish which material produced it. Several different ground features may contribute to an area that the instrument did not distinguish clearly.

5 The group also has a more detailed recent image. It shows a narrow paved strip beside the same fence. That image helps identify the present arrangement. It cannot by itself establish when the strip was built. If the group copied the recent outline onto the older picture, the result would show where to look, not independent evidence that the outline existed earlier. The two dates still matter.

6 One option is to change the historical question. The older record may support a comparison of the field’s broad outline even if it cannot settle the narrow strip’s material. Another option is to seek an additional dated record that distinguishes the strip. A ground photograph or a record of the work might help, depending on what it actually shows. Neither becomes useful merely because it has a sharper appearance.

7 On the group’s display board, the earlier image appears beside its enlargement. Both carry the same recording date. The recent image has its own date, and the narrow strip is marked as a feature visible there. Beneath the broad band in the earlier image, the group leaves the material unidentified. The empty label preserves a question the record has not answered instead of allowing the enlarged squares to answer it by appearance.

Background source · NASA Earthdata, SAR Handbook, Chapter 5

1. What would the requested capture information help the group decide?

Circle ONE letter.

A Whether the earlier picture was recorded before the playing field's outline changed.

B Whether the earlier record could distinguish the narrow feature they are investigating.

C Whether the recent picture was taken from the same direction as the earlier picture.

D Whether the earlier image can be given the clearer boundary drawn from the recent one.

2. Why does the enlargement carry the earlier image's date while the recent image has its own?

Circle ONE letter.

A The dates distinguish the paving work in the recent image from the first printing of the older one.

B The dates distinguish the first interpretation of the recent image from the survey behind the older one.

C The dates distinguish a separate recording from a reworked version of information already recorded.

D The dates distinguish the recent image's first appearance on a screen from the older image's original recording.

Passage 2 · The Name Under the Photograph

1 Nell put the small card facedown before her mother reached the exhibition wall. Her photograph showed the back steps of their apartment building just after rain. A yellow bucket caught the light beneath the lowest rail. The exhibition had pictures of distant mountains and crowded streets, but Nell had chosen the place she passed every day. Her name was printed on the card beneath the photograph. She had checked the spelling three times.

2 Her mother arrived carrying a family album. She had promised to bring pictures for the school's neighborhood display downstairs. Nell took the album and placed it on a chair. Her mother stopped in front of the wet steps. She recognized the bent rail and laughed about the bucket they kept forgetting to move. Nell put her hand over the facedown card and asked whether the photograph belonged beside the others.

3 "It makes the steps look almost grand," her mother said. She leaned closer to the dark space under the rail. Nell waited. Her mother pointed out where the paint had peeled, then asked who had taken the picture. Nell lifted her hand and turned the card over. For a moment, her mother looked from the name to the photograph without speaking. Nell began straightening the edge of a picture that was already straight.

4 Two classmates joined them. They asked Nell about the low angle and the afternoon she had waited for the rain to stop. Her mother opened the album on the chair, then closed it again. Nell expected a childhood story. Instead, her mother asked whether the classmates had also submitted photographs. One showed her a print across the room, and they went to look at it together.

5 When they returned, Nell's aunt called. The relatives were waiting downstairs to carry the album to the neighborhood display. Her mother said she would come in a few minutes. Nell reached for the album, but her mother picked it up herself. "You have people asking you questions here," she said. She put the album under her arm and waited while another visitor asked Nell about the reflection in the bucket.

6 The visitor wondered whether Nell had moved the bucket for the photograph. Nell described finding it there and shifting her own position until the rail cut across the light. Her mother stood a little behind the visitor. This time she did not add that the bucket usually held cleaning cloths. Nell finished explaining, then looked toward her. Her mother asked where she had stood to get so low.

7 Downstairs, a door opened and her aunt called again. Her mother answered but stayed for the end of Nell's explanation. Before leaving, she touched the corner of the name card, which was still facing out. Nell moved the empty chair away from the photograph so the next visitor could stand closer. The family album went downstairs; her mother's question stayed with Nell.

3. What most likely explains Nell's handling of the name card at the start?

Circle ONE letter.

A She wants her mother to focus on the family display before discussing the exhibition.

B She wants to prevent classmates from recognizing a photograph of their building.

C She wants to hide an error in the spelling of the name printed on the card.

D She wants her mother's view of the photograph before its maker is known.

4. By the end of the story, what does the mother appear to want from her conversation with Nell?

Circle ONE letter.

A She wants Nell to explain how the steps fit into the family's earlier memories.

B She wants Nell to explain how she framed the familiar place in her photograph.

C She wants Nell to explain how the picture can be added to the family album.

D She wants Nell to explain which household objects should be removed from view.

Passage 3 · After the Last Cue

1 Alma could change the room in eleven seconds. She rolled the bench behind the curtain, turned the doorway on its stand and brought up the blue light. Her friend, who played the younger brother, had promised to show his grandparents the control desk before the school performance. Alma had put a spare chair beside it. Usually nobody visited her corner unless a microphone stopped working or a lamp failed to come on.

2 Before the final rehearsal, her friend passed the desk with his grandparents. He waved toward Alma but kept walking. "We'll come back," he called. At the front of the hall, the director introduced him to another visitor. His grandparents stood beside him while he explained the scene. Alma folded the spare chair and leaned it against the wall. Then she checked the blue-light cue twice, although nothing had changed.

3 The rehearsal began. Onstage, her friend waited beside the doorway, listening for the music that told him to enter. Alma let the music play a fraction longer than usual. He looked toward the desk before entering. During the break, he asked whether the recording had stuck. She said she had been checking the transition. He looked at the folded chair, then asked if his grandparents had come back. They had not.

4 “I forgot the time,” he said. Alma kept writing on the cue sheet. He started explaining that the director had wanted to introduce him. She turned the page before he finished. A teacher called him to try the last scene again. He went back to the stage, but this time he waited until Alma looked up before taking his place. She gave the signal and ran the cue at its usual length.

5 After the last scene, the director arranged the curtain call. The actors would bow first, then step aside for the crew. Alma said the desk needed someone until the lights went out. The director explained that a teacher would cover the last cue. Her friend moved a piece of tape so there was room beside him. Alma thanked the director but asked to stay at the desk anyway.

6 On performance night, she ran the change cleanly. The audience clapped after the last scene. Her friend glanced toward her corner before joining the line of actors. The space beside him remained empty. From the desk, Alma watched his grandparents stand with the other families. She brought up the final light, waited through the bows and pressed the switch that ended the show.

7 When the hall emptied, her friend came to the desk carrying the folded chair. He opened it and sat without asking to see the controls. Alma clipped the cue sheet into its folder. He asked whether she was going home immediately. She took the cue sheet out again and pointed to the music cue. “That was longer on purpose,” she said. He stayed in the chair while she explained.

5. What does the contrast between the two rehearsal entrances suggest about how the friend times his part?

Circle ONE letter.

A He treats the unexpected cue as a direction to enter late on every later run.

B He follows the director’s introductions instead of waiting for the music to begin.

C He begins coordinating his entrance with Alma instead of relying on the recording alone.

D He starts controlling the sound cue himself instead of leaving its timing to Alma.

6. What most likely explains the longer music cue during the rehearsal?

Circle ONE letter.

A She lets her disappointment about the missed visit affect the timing of the music.

B She gives her friend an extra pause that the director has requested for his entrance.

C She tries to draw an audience response that will extend the length of the curtain call.

D She worries about a fault in the recording and tests whether it needs a repair.

Teacher use: ____ / 6