



# RIT Reference Charts

Measures of Academic Progress® (MAP®) and  
MAP for Primary Grades (MPG)

Included in this book:

- Reading
- Language Usage
- Mathematics
- MPG for Reading
- MPG for Mathematics
- Science

# Contents

<b>Reference Chart for Reading.....</b>	<b>3</b>
Word Recognition, Structure, and Vocabulary.....	4
Reading Literature: Key Ideas, Reading for Understanding.....	5
Reading Literature: Craft, Structure, Evaluation.....	6
Reading Informational Texts: Key Ideas, Reading for Understanding.....	7
Reading Informational Texts: Craft, Structure, Evaluation.....	8
<b>Reference Chart for Language Usage.....</b>	<b>9</b>
Writing Process.....	10
Writing Types and Purposes.....	11
Grammar and Usage.....	12
Writing Conventions.....	13
<b>Reference Chart for Mathematics.....</b>	<b>14</b>
Number Sense/Number Systems.....	15
Estimation and Computation.....	16
Algebra.....	17
Geometry.....	18
Measurement.....	19
Statistics and Probability.....	20
Problem Solving, Reasoning, and Proofs.....	21
<b>Reference Chart for MPG Reading.....</b>	<b>22</b>
Phonological Awareness.....	23
Phonics.....	24
Concepts of Print.....	25
Vocabulary and Word Structure.....	26
Comprehension.....	27
Writing.....	28
<b>Reference Chart for MPG Mathematics.....</b>	<b>29</b>
Problem Solving.....	30
Number Sense.....	31
Computation.....	32
Measurement and Geometry.....	33
Statistics and Probability.....	34
Algebra.....	35
<b>Reference Chart for Science.....</b>	<b>36</b>
Physical Sciences.....	37
Life Sciences.....	38
Earth and Space Sciences.....	39
Scientific Inquiry.....	40
Nature of Science.....	41

# RIT

## Reference Chart for Reading



MAP tests produce scores that make it possible to monitor student growth from year to year along developmental curriculum scales or continua. The chart inside shows examples of the kinds of work students can do at various points along the MAP RIT scale, assuming they have been exposed to content. This type of information is helpful in supporting appropriate instruction.

Please note that each subject area has a unique alignment to the RIT scale. As a result, scores between subjects are not equivalent.

### How to use the charts:

1. Find the column containing the student's score for a particular subject. For example, if the student's score in "Word Meaning and Vocabulary Knowledge" is 188, refer to the column labeled 181-190.
2. Read down the column to locate a sample test question for a given reporting area, such as "Word Meaning and Vocabulary Knowledge." A student's score suggests that, currently, he or she is likely to get about half of the questions of this difficulty correct.
3. Now look at the questions in the column(s) to the left. The student is likely to get most of these correct, assuming he or she has been instructed in these skills and concepts.
4. The questions in the column(s) to the right will probably require new learning on the student's part.

Please note:

Test items in this booklet are sample items, and many are not calibrated or field-tested. For purposes of this document, RIT scale alignment is an approximation.

Some passages have been truncated due to space considerations.

Word Recognition, Structure, and Vocabulary

Students can decode words, recognize common words, understand word relationships and structures, and can use context cues to decipher word meaning.

below 161

Choose the word that matches the picture.



The dog has a \_\_\_\_\_ in his mouth.

- 1. ball
- 2. bone
- ✓ 3. flower
- 4. shoe

161-170

Which word has the same beginning sounds as crunch?

- ✓ 1. creep
- 2. rattle
- 3. truck
- 4. cent

171-180

Read the sentences.

Jackie couldn't believe how much fun she had on the field trip. She kept replaying the day's events in her mind on the bus ride back to school.

In the word "replaying," what does the prefix re- mean?

- 1. not
- 2. two
- ✓ 3. again
- 4. after

181-190

Read the sentences.

My friend Chris always does what he promises to do. If he says he'll meet me after school, he is always there waiting for me. Chris is a reliable friend.

What does reliable mean?

- 1. friendly
- 2. bright
- ✓ 3. dependable
- 4. capable

191-200

Read the sentences.

Lightning struck the \_\_\_\_\_ of the lilac tree. Please put the \_\_\_\_\_ of old costumes in the attic.

Which word will fit in both spaces?

- ✓ 1. trunk
- 2. branch
- 3. limb
- 4. root

201-210

Which set of words all have the same root word?

- 1. extra, relax, index
- 2. contain, restrain, plain
- 3. here, everywhere, there
- ✓ 4. knowledge, unknown, knowing

211-220

What is the correct way to divide the word responsibility into syllables?

- 1. re|sponsi|bil|ity
- 2. resp|onsi|bilit|y
- 3. respon|sebil|ity
- ✓ 4. re|spon|si|bil|ity

221-230

Read the sentence and dictionary entry.

The lives saved when the volcano exploded vindicated the expensive early warning system.

**vindicate** (vin-di-keyt) *v.*

- 1. to clear from an accusation
- 2. to justify by evidence or argument
- 3. to defend against opposition
- 4. to claim for oneself or another

Which definition of vindicate is used in the sentence above?

- 1. definition 1
- ✓ 2. definition 2
- 3. definition 3
- 4. definition 4

above 230

Based on your knowledge of Latin roots, what is the meaning of "ambidextrous"?

- 1. lives on land and in water
- 2. walks quickly
- 3. before the flood
- ✓ 4. can use both hands equally



Reading Literature: Key Ideas, Reading for Understanding

Students can read and comprehend literary texts, make inferences and predictions, and draw conclusions. They can determine key ideas, analyze the development of themes, and summarize.

below **161**

**Read the story.**

Mother was ready. She had streamers and balloons. She baked a cake. She invited Sandy's friends. She asked them not to tell Sandy. Sandy will come home from school. Her friends will shout when she turns on the lights!

**What is Sandy's mother planning?**

- 1. Sandy's first day at school
- 2. a picnic in the backyard
- ✓ 3. Sandy's surprise party
- 4. a trip to the bakery

**161-170**

**Read the directions.**

Making mud pies is fun. Find some nice sticky mud. Shape it into little pies. Set the pies in the sun to dry out.

**This will work best on**

- ✓ 1. a sunny day.
- 2. a rainy day.
- 3. a snowy day.
- 4. a cloudy day.

**171-180**

**Read the paragraph.**

Gordon loves to visit his aunt and uncle in Vermont. He goes up every summer to visit them. They live on a houseboat on the lake. *(passage continues)*

**What does Gordon like to do best?**

- 1. swim in the lake
- 2. fish for perch and trout
- 3. read books on the boat deck
- ✓ 4. steer the boat around the lake

**181-190**

**Read the passage.**

The wind whipped the tops of the trees so they looked like they were dancing. Clouds raced across the sky. Leaves and bits of paper swirled around. *(passage continues)*

**Which sentence best tells what the story is about?**

- 1. They are having fun in the snow.
- 2. They are cleaning up after a big storm.
- 3. There is a double rainbow in the sky.
- ✓ 4. A big rainstorm is about to start.

**191-200**

**Read the passage.**

Molly stared out the bus window with blank eyes. Next to her, a woman pulled herself up. She got off at the next stop. Molly looked over and saw that she had left something on the seat. *(passage continues)*

**What was Molly's first reaction when she picked up the wallet?**

- ✓ 1. to turn it in to the bus driver
- 2. to look at the pictures
- 3. to call after the woman
- 4. to take the money

**201-210**

**Read the story.**

The lights went out, and people at the costume ball stopped dancing. They spoke in whispers. Then a guest dressed as a lion tamer cried aloud, "Watch out!" Polly screamed. *(passage continues)*

**Who is most likely the thief in this story?**

- 1. the lion tamer
- 2. Polly
- 3. Detective Cutler
- ✓ 4. the pirate

**211-220**

**Read the passage.**

He lived on the bank of a mighty river, broad and deep, which was always silently rolling on to a vast undiscovered ocean. It had rolled on, ever since the world began. It had changed its course sometimes, and turned into new channels, leaving its old ways dry and barren. *(passage continues)*  
(from "Nobody's Story" by Charles Dickens)

**What is the main point in this passage?**

- 1. The river supported life on its banks.
- 2. It is hard to swim against the tide.
- ✓ 3. The flow of the river to the ocean is unchanging.
- 4. Earth will continue to circle around the sun.

**221-230**

**Read the passage.**

Bernadou clung to his home with a dogged devotion. He would not go from it to fight unless compelled, but for it he would have fought like a lion. *(passage continues)*  
(from "A Leaf in the Storm" by Louise De La Ramee)

**Based on the passage, which statement about Bernadou is most likely true?**

- 1. Bernadou had traveled to the capital of his country many times.
- 2. Bernadou was a drifter, never spending much time in any one place.
- ✓ 3. Bernadou would fight with loyalty and fierceness for any good cause.
- 4. Bernadou felt a strong connection to his hometown, but not his country.

above **230**

**Read the passage.**

You, with no limit or bound, may choose for yourself the limits and bounds of your nature. We have placed you at the world's center so that you may survey everything else in the world...*(passage continues)*  
(from "Oration On the Dignity of Man" by Giovanni Pico della Mirandola)

**What is the main idea of the passage?**

- 1. Humans are the most important things in the world.
- ✓ 2. Humans are not like anything else in the heavens or on Earth.
- 3. Humans have free will to become whatever they want to be.
- 4. Humans are responsible for the well-being of all creatures.

Reading Literature: Craft, Structure, Evaluation

Students can analyze the structure of literary texts; analyze literary elements of a text, such as plot, character, theme, and setting; analyze literary devices; and evaluate the author’s craft.

below **161**

**Read the story.**

Maria ate a big bowl of cereal. After breakfast, Maria put her book in her backpack. *(passage continues)*

**What did Maria do first?**

- ✓ 1. eat her breakfast
- 2. put her book in her backpack
- 3. put on her coat
- 4. walk to the bus stop

**161-170**

**Read the story.**

Rita was walking to the library one day in the rain. There were many people out on the streets... *(passage continues)*

**What caused Rita to trip over the curb?**

- 1. walking in the rain
- ✓ 2. talking on the phone
- 3. people on the streets
- 4. her bag of books

**171-180**

**Read the passage.**

Dave and Mike had a great time sledding. They pulled their sleds up the big hill and went down face-first. *(passage continues)*

**What did Mike and Dave do right after playing outside?**

- 1. They pulled their sleds up the big hill.
- 2. They raced down the hill.
- ✓ 3. They had grilled cheese and soup.
- 4. They fell asleep on the couch.

**181-190**

**Read the sentences.**

Scott opened his eyes and looked at the clock. He pulled the blankets over his head to keep the sun out. He yawned and closed his eyes. He just wanted to go back to sleep.

**What does the author want you to think about Scott?**

- 1. He is lazy.
- ✓ 2. He is tired.
- 3. He is hungry.
- 4. He is scared.

**191-200**

**Read the passage.**

Laura’s teacher asked to see her science project. “But Mrs. Thompson, I forgot it was due today!” Laura said. Then she asked if she could call her mom. “Mom, can you bring my science project to school? It’s due today!” She listened to her mother for a moment. *(passage continues)*

**How do readers learn about Laura?**

- 1. from what other characters say
- ✓ 2. from what she says to others
- 3. from what she looks like
- 4. from descriptions of her feelings

**201-210**

**Read the passage.**

The clouds lifted, and the pilot sighted the tower of the Jefferson City airport. He had already radioed ahead that he was arriving. *(passage continues)*

**What is the best title for this passage?**

- 1. Jefferson City Airport
- 2. One Cloudy Night
- ✓ 3. A Safe Landing
- 4. A Pilot’s Life

**211-220**

**Read the passage.**

Many years ago, a young man named Takoda decided to go on foot to Dark Mountain, a three-day journey from his village. Two days into his journey, he paused for nourishment in a narrow valley. *(passage continues)*

**How does the setting contribute to Takoda’s main problem in the story?**

- 1. He is unable to see clearly through dust from the valley floor.
- 2. He is unable to find shelter on the valley floor from threatening weather.
- 3. The valley does not provide him with the nourishment he needs for his journey.
- ✓ 4. The valley does not provide him with an easy way to avoid the buffalo stampede.

**221-230**

**Read the poem excerpt.**

I saw the different things you did,  
But always you yourself you hid.  
I felt you push, I heard you call,  
I could not see yourself at all--  
O wind, a-blowing all day long,  
O wind, that sings so loud a song!  
(from “The Wind” by Robert Louis Stevenson)

**What is the rhyme scheme?**

- 1. AAABBB
- 2. ABBACC
- ✓ 3. AABBB
- 4. ABCABC

above **230**

**Read the poem.**

Hope is the thing with feathers  
That perches in the soul,  
And sings the tune without the words,  
And never stops at all, *(poem continues)*  
 (“Hope” by Emily Dickinson)

**Which statement best expresses the meaning of the extended metaphor that compares hope to a bird throughout the poem?**

- ✓ 1. Hope is a constant presence and gives people comfort.
- 2. Hope flies away like a bird during storms and difficult times.
- 3. Hope is demanding, like a bird that constantly needs to be cared for.
- 4. Hope tries to sing songs that are uplifting, but forgets the words to them.

Reading Informational Texts: Key Ideas, Reading for Understanding

Students can read and comprehend non-literary texts, make inferences and predictions, and draw conclusions. They can determine key ideas, analyze the development of arguments, and summarize.

below 161

**Read the passage.**

Many kinds of dogs live in the world. Some have been around for a long time. *(passage continues)*

**What do Mudis like?**

- 1. other dogs
- ✓ 2. having work to do
- 3. living in the city
- 4. sleeping all day

161-170

**Read the sentences.**

This is how you make lemonade. It is fun and easy... *(sentences continue)*

**What are the sentences about?**

- 1. what lemonade tastes like
- 2. where to buy lemons
- ✓ 3. how to make lemonade
- 4. when to make lemonade

171-180

**Read the paragraph.**

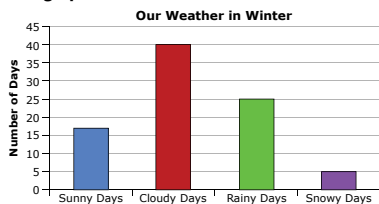
A hen lays about one egg a day. A chick takes three weeks to be born from an egg. *(passage continues)*

**When do chicks start peeping?**

- 1. after one week
- 2. after two weeks
- ✓ 3. after three weeks
- 4. after four weeks

181-190

**Read the graph.**



**What kind of weather happens most often?**

- 1. sunny
- 2. cloudy
- ✓ 3. rainy
- 4. snowy

191-200

**Read the paragraph.**

Platinum is a silver-white metal that is even more valuable than gold. It will not corrode or tarnish as many metals do when exposed to air. It can be used as a catalyst\* in processes that change harmful pollutants into nonpollutants. *(passage continues)*

\*Catalyst: a substance that can speed up or bring about a chemical reaction without being affected itself

**According to the passage, why is platinum valued by jewelers?**

- 1. It can be used as a catalyst.
- ✓ 2. It is good for gem settings.
- 3. It is rarer than gold.
- 4. It is produced in many countries.

201-210

**Read the paragraph.**

Platinum is a silver-white metal that is even more valuable than gold. It will not corrode or tarnish as many metals do when exposed to air. It can be used as a catalyst\* in processes that change harmful pollutants into nonpollutants. *(passage continues)*

\*Catalyst: a substance that can speed up or bring about a chemical reaction without being affected itself

**According to the passage, why is platinum valued by jewelers?**

- 1. It can be used as a catalyst.
- ✓ 2. It is good for gem settings.
- 3. It is rarer than gold.
- 4. It is produced in many countries.

211-220

**Read the paragraph.**

Just as the clock struck midnight, Greg was awakened by a sound coming from outside his window. He jumped out of bed to inquire about the sound... *(paragraph continues)*

**What does the author portray in this paragraph?**

- ✓ 1. a science fiction setting
- 2. a historical fiction setting
- 3. a tall tale setting
- 4. a mystery setting

221-230

**Read the paragraph.**

I.M. Pei is a famous 20th century architect who was born in China, but educated in the United States. Pei designed many great public spaces of the last 50 years, but he considered the John F. Kennedy library his most important commission... *(paragraph continues)*

**Which is most likely the author's purpose?**

- ✓ 1. to inform readers about a famous architect
- 2. to persuade readers to visit Pei's buildings
- 3. to inspire readers to study architecture
- 4. to explain how architecture changed in the 20th century

above 230

**Read the poem.**

The fog comes  
on little cat feet.

It sits looking  
over harbor and city  
on silent haunches  
and then moves on.  
("The Fog" by Carl Sandburg)

**Which literary device is used in the poem?**

- 1. onomatopoeia
- 2. oxymoron
- 3. parallelism
- ✓ 4. extended metaphor

Reading Informational Texts: Craft, Structure, Evaluation

Students can analyze the structure of texts, evaluate a text for bias, and evaluate the author’s craft.

below **161**

**Which is a toy?**

- 1. chair
- 2. shirt
- 3. ball
- 4. cookie

**161-170**

**Read the sentences.**

The wind blew and the papers fell off the table. It made a mess

**Why did the papers fall?**

- 1. The wind blew.
- 2. The table fell.
- 3. The papers made a mess.
- ✓ 4. It was getting cold.

**171-180**

**Read the passage.**

The best place to go on vacation is Florida. There are beautiful beaches, luxury hotels, good restaurants, and interesting shops. *(passage continues)*

**What is the author’s opinion of Florida?**

- 1. The weather is too hot.
- 2. Florida has no variety.
- 3. Only boaters will enjoy Florida.
- ✓ 4. Florida is a great place to visit.

**181-190**

**Read the passage.**

(1)One of the most famous bad guys in history was Robin Hood. (2)People think he lived in England, and hid in the forest with his friends. *(passage continues)*

**In which sentence does the writer state how he feels about Robin Hood?**

- 1. Sentence 2
- 2. Sentence 3
- 3. Sentence 4
- ✓ 4. Sentence 5

**191-200**

**Read the passage.**

There are many differences between the ancient Olympics and the Olympics of today. In ancient times, the games were held only during the summer, but today there are summer and winter Olympic Games. *(passage continues)*

**Which organization structure is used in this passage?**

- 1. sequence of events
- 2. order of importance
- 3. cause and effect
- ✓ 4. compare and contrast

**201-210**

**Read the paragraphs.**

**Review 1**

Happy Birthday, Maudie is a delightful movie. The characters are believable, and the plot is a tender love story. *(passage continues)*

**Review 2**

Don’t bother to see Happy Birthday, Maudie. It’s a sappy movie about a dumb girl who lets everyone push her around. *(passage continues)*

**Based on the descriptions in the two reviews, on which topic are the two reviewers most likely to agree?**

- 1. the main character’s personality
- 2. the quality of the plot
- ✓ 3. the details of the setting
- 4. the overall quality of the movie

**211-220**

**Read the passage.**

**A Unique Creature: The Thorny Devil**

The thorny devil is a very interesting and unusual creature. From its name, one might guess that it is large and scary. *(passage continues)*

**Which explanation is the most likely reason the author includes a chapter heading in this passage?**

- 1. to present information about key vocabulary terms
- 2. to supply reasons why this is an interesting subject
- 3. to explain background information about the subject
- ✓ 4. to provide an idea of what the selection will be about

**221-230**

**Read the report excerpt.**

Changes in climate have also been manifested in altered precipitation patterns. Over the last century, the amount of precipitation has increased significantly across eastern parts of North America. *(passage continues)*

(from “Adaptation Options for Climate-Sensitive Ecosystems and Resources” by the U.S. Environmental Protection Agency)

**Which feature of this text most assures the validity of the information?**

- ✓ 1. the use of citations
- 2. the vocabulary
- 3. the use of percents
- 4. the author’s tone

above **230**

**Read the passage written by a company that organizes scientific research into a database.**

Our Mission: Our database of more than 3,000 articles of documented investigations is an easy-to-use tool for scientific research. Users may look for a general topic or narrow their search through the use of three topic code parameters. *(passage continues)*

Topic Code Parameters	Description
Social Context	Who conducted the research? Where was it conducted?
Method	How was the research conducted? What procedures were used?
Findings	What was observed? What results were achieved?

**How does the chart complement the text?**

- 1. It summarizes the text.
- ✓ 2. It provides detail not in the text.
- 3. It serves to contrast information in the text.
- 4. It provides transition between the two parts of the text.



# RIT

## Reference Chart for Language Usage



MAP tests produce scores that make it possible to monitor student growth from year to year along developmental curriculum scales or continua. The chart inside shows examples of the kinds of work students can do at various points along the MAP RIT scale, assuming they have been exposed to content. This type of information is helpful in supporting appropriate instruction.

Please note that each subject area has a unique alignment to the RIT scale. As a result, scores between subjects are not equivalent.

### How to use the charts:

1. Find the column containing the student's score for a particular subject. For example, if the student's score is 188 in "Language: Understand, Edit Mechanics," refer to the column labeled 181-190.
2. Read down the column to locate a sample test question for a given reporting area, such as "Language: Understand, Edit Mechanics." A student's score suggests that, currently, he or she is likely to get about half of the questions of this difficulty correct.
3. Now look at the questions in the column(s) to the left. The student is likely to get most of these correct, assuming he or she has been instructed in these skills and concepts.
4. The questions in the column(s) to the right will probably require new learning on the student's part.

Please note:

Test items in this booklet are sample items, and many are not calibrated or field-tested. For purposes of this document, RIT scale alignment is an approximation.

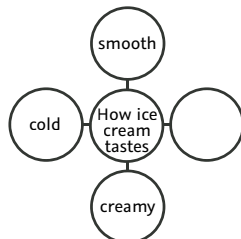
Some passages have been truncated due to space considerations.

## Writing Process

Students use skills to write, draft, revise, edit, and proofread.

## below 161

Study the graphic organizer.



Which word would **best** complete the graphic organizer?

1. bitter
- ✓ 2. sweet
3. loud
4. salty

## 161-170

Which group of words would be **best** to use to tell about the Moon?

1. soft, small, blue
2. close, green, cold
- ✓ 3. white, round, full
4. wet, black, square

## 171-180

Read the paragraph.

A cat is a great pet to have. To keep your cat healthy, make sure to give it plenty of fresh water. Dogs like to swim. Don't feed your cat human food. For a special treat, you can give your cat some catnip.

Which sentence does **NOT** belong in the paragraph?

- ✓ 1. A cat is a great pet to have.
2. Dogs like to swim.
3. Don't feed your cat human food.
4. For a special treat, you can give your cat some catnip.

## 181-190

Read the paragraph.

I always look forward to winter for one reason: hot chocolate. Hot chocolate is my favorite. It warms me up when I am really cold.

Which sentence could be added to describe what hot chocolate tastes like?

- ✓ 1. It is sweet and warm and so chocolaty!
2. Hot chocolate comes in different flavors.
3. I have hot chocolate every day in winter.
4. Hot chocolate is drunk by people of all ages.

## 191-200

Read the paragraph.

Amy was in a rush this morning. She forgot her books. She felt embarrassed walking into class during Mr. Bishop's lecture on Greek city-states. She sat on the floor outside the class and waited.

Which revision of the sentences **best** shows a cause-effect relationship between the ideas in the paragraph?

- ✓ 1. Since Amy was in a rush this morning, she forgot her books. She was late and felt embarrassed interrupting Mr. Bishop's lecture, so she sat on the floor outside class and waited.
2. Amy waited, sitting on the floor outside class. Before that, she realized she forgot her books. Before that, she had been rushing.
3. First, Amy had been in a rush this morning. Then, she forgot her books. Next, she felt embarrassed to interrupt Mr. Bishop's lecture. Finally, she sat on the floor outside class and waited.
4. If Amy rushed in the morning, she might forget her books. If she forgot her books, she might be embarrassed to interrupt Mr. Bishop. If she feels embarrassed, she might sit on the floor outside class and wait.

## 201-210

Laurie decides to write a biography on the life of Pablo Picasso.

Which method of organization will help Laurie to sequence the life of Picasso?

1. a Venn diagram
- ✓ 2. a timeline
3. a web
4. a graph

## 211-220

Your class just finished studying rivers. Your teacher has assigned you to write a research paper that further explores rivers.

Which of the following would be the **best** research question?

1. What is your favorite river?
- ✓ 2. How are the Nile and Amazon rivers different?
3. Where is the world's longest river?
4. How many times has the Nile River flooded?

## 221-230

You are writing a paragraph about how you felt one time when you were swimming.

Once I was swimming because I was sad, and I swam as fast as I could, but I was still sad. I felt like crying. I used to swim to be the fastest, but not anymore. Now I swim to be healthy. I really want to be a lawyer because they help people. By swimming, you stay in shape, and you can grow up to be a healthy person.

Which is the **best** way for you to revise your draft?

- ✓ 1. Stay on the subject. Take out the sentence about wanting to be a lawyer.
2. Explain why you wanted to be the fastest swimmer.
3. Change some of the words so you sound more like a lawyer.
4. Introduce the paragraph with a sentence that explains why good health is important.

## above 230

Read the information.

Mike began this persuasive essay for his English class.

*There is a mystery at our school today. We are being subjected to a poison. This school was built over eighty years ago. Back then, less was known about proper building materials. This means that the school was built with asbestos.*

A peer reviewer gave this feedback to Mike: I like the opening paragraph, but think that the word "mystery" in the first sentence could be replaced with a more appropriate word that describes the current situation better.

Which revision **best** incorporates the feedback from the peer reviewer?

1. There is a scene at our school today.
- ✓ 2. There is a problem at our school today.
3. There is a crime at our school today.
4. There is a pest at our school today.

## Writing Types and Purposes

Students recognize different types of writing and understand their purposes.

below **161****Read the sentence.**

Once there was a little elf who wanted to fly.

**This sentence might be used to**

1. tell about something you saw last night.
- ✓ 2. begin a funny make-believe story.
3. thank Aunt Mary for a birthday present.
4. tell about a trip to a farm.

**161-170****Read the poem.**

Roses are red,  
Violets are blue,  
Better hide quickly,  
I'm coming for \_\_\_\_\_.

**Which rhyming word best completes the poem?**

1. blue
2. through
- ✓ 3. you
4. grew

**171-180****Read the sentences.**

You are invited to a birthday party for Jesse. It will be held at 1402 Pine Street from 2 - 4 PM on Wednesday, June 25th.

**These sentences would be used to write a**

1. fairy tale.
- ✓ 2. party invitation.
3. letter.
4. book report.

**181-190**

**Kema is giving a speech to her class about the animals of Africa.**

**What should Kema show her classmates to help them understand her topic?**

1. a globe that shows the location of Africa
- ✓ 2. a photo of each animal she talks about
3. a tiger's tooth that her father found
4. a bar graph showing the numbers of animals

**191-200****How is a poem developed?**

1. State the idea and give examples or definitions.
- ✓ 2. Use words in rhythmic patterns to create images.
3. Tell what happened in the order it happened.
4. State your opinion and support it with facts or reasons.

**201-210**

**Derrick is writing a science report about the moons of Jupiter.**

**Which source of information will be most useful to Derrick?**

1. a chart that shows the orbits of all the planets
2. a science fiction movie about life on one of Jupiter's moons
- ✓ 3. a book that names and describes the moons of each planet
4. a magazine article that explains the origins of the universe

**211-220****These sentences form a paragraph.****Which is the topic sentence?**

1. Painting the window frames will take twice as much time as painting the walls.
2. A good brush and an extension ladder are necessary.
- ✓ 3. The most time-consuming job in painting a house is painting the trim.
4. The person who thinks the job is half done when the walls are finished is in for a surprise.

**221-230****What does the conclusion to a report do?**

1. states what you plan to discuss in the writing
2. lists the sources used
3. focuses on a specific supporting detail
- ✓ 4. leaves the reader with a clear understanding of the report

above **230****Which is the best thesis for a persuasive essay on World War I?**

1. World War I began in 1914 when Archduke Ferdinand was shot.
2. America tried to stay neutral when World War I began.
3. World War I took place across Europe and Africa, lasting four long years.
- ✓ 4. World War I was inevitable due to many complicating factors.

## Grammar and Usage

Students understand the conventions of grammar and usage.

## below 161

Choose the missing word.

The dog \_\_\_\_\_ in the house.

1. am
- ✓ 2. is
3. are
4. were

## 161-170

Choose the missing word.

Can you watch the movie with \_\_\_\_\_ ?

1. we
- ✓ 2. us
3. he
4. I

## 171-180

Choose the **best** words to complete the sentence.

Greg is \_\_\_\_\_ his father, George.

1. tallest than
2. taller from
- ✓ 3. taller than
4. tall than

## 181-190

Read the sentence.

The student wrote a report \_\_\_\_\_ Abraham Lincoln, our 16th president.

Which preposition would **best** complete the sentence?

1. in
2. from
- ✓ 3. about
4. with

## 191-200

Choose the missing word(s).

The sun seems to rise \_\_\_\_\_ each day.

1. early
2. more early
- ✓ 3. earlier
4. most early

## 201-210

Read the sentence fragment.

Each penguin in the pool.

Which is a complete sentence?

1. Each penguin in the deep pool.
2. Each and every penguin in the pool.
- ✓ 3. Each penguin in the pool swam.
4. Each little penguin in the deep pool.

## 211-220

Which sentence contains a double negative?

1. Ron is seldom late for a meeting.
2. You should hesitate before raising your voice.
- ✓ 3. The comedian didn't say nothing funny.
4. The cake can't bake in a cold oven.

## 221-230

Read the draft of Talia's paragraph.

The tallest mountain in the world is Mount Everest. Its elevation is 29,029 feet. It was summited in 1953 for the first time.

Talia wants to combine these statements into one sentence.

Which **best** combines these sentences?

1. The tallest mountain, at 29,029 feet, in the world is Mount Everest and it was first summited in 1953.
2. The tallest mountain in the world, Mount Everest (29,029 feet elevation), first successfully was summited in 1953.
- ✓ 3. Mount Everest, the tallest mountain in the world with an elevation of 29,029 feet, was summited in 1953 for the first time.
4. First successfully summited in 1953, the tallest mountain, Mount Everest, in the world has an elevation of 29,029 feet.

## above 230

Which sentence shows clear pronoun-antecedent agreement?

1. We unpacked our books from the boxes and then returned them to the office.
2. As soon as the monkeys left their cages, the janitors cleaned them.
3. If anybody wants to play professional basketball, you have to practice the fundamentals.
- ✓ 4. For English class, the students had to memorize a monologue by their favorite playwright.



## Writing Conventions

Students understand the conventions of punctuation, capitalization, and spelling.

below **161****Read the words.**

Do flowers bloom in the spring

**Which mark(s) will punctuate the words correctly?**

1. ,
2. " "
3. '
- ✓ 4. ?

**161-170****Read the sentence.**

My teacher gave the note to mrs. Begay to take home.

**Which word needs a capital letter?**

1. teacher
2. note
- ✓ 3. mrs.
4. home

**171-180****Which word is always capitalized?**

1. we
2. me
- ✓ 3. i
4. us

**181-190****Which sentence correctly uses quotation marks?**

- ✓ 1. Mom said, "Go clean your room."
2. "What's that? I asked."
3. "Mr. Ramirez said, Get in the car."
4. "Dad," I asked, "can I feed the fish?"

**191-200****Which is the correct spelling for more than one berry?**

1. berryes
2. berryeses
- ✓ 3. berries
4. berrys

**201-210****Which sentence has the words capitalized correctly?**

1. He said, "The Tide is Coming In."
2. He said, "The Tide is coming in."
3. He said, "the tide is coming in."
- ✓ 4. He said, "The tide is coming in."

**211-220****Which sentence has the underlined word spelled correctly?**

1. Sarah wore a costum for the school play.
- ✓ 2. The movie will continue playing during recess.
3. The mannar of his speaking was formal.
4. I discribed the first time I went to the ocean.

**221-230****Which sentence is punctuated correctly?**

1. Pilar watch out for the bees in the garden.
2. It seems to us, Mr. Jones that the trip should be canceled.
3. What are you going to do after practice tonight Tom?
- ✓ 4. If you ask me, Lorraine, this phone book is outdated.

above **230****Which group of words is spelled correctly?**

1. phsycology, provide, leige
2. lisence, opposite, factory
- ✓ 3. sophisticated, détente, retrospect
4. truley, paradox, decieve

# RIT

## Reference Chart for Mathematics



MAP tests produce scores that make it possible to monitor student growth from year to year along developmental curriculum scales or continua. The chart inside shows examples of the kinds of work students can do at various points along the MAP RIT scale, assuming they have been exposed to content. This type of information is helpful in supporting appropriate instruction.

Please note that each subject area has a unique alignment to the RIT scale. As a result, scores between subjects are not equivalent.

### How to use the charts:

1. Find the column containing the student's score for a particular subject. For example, if the student's score in "Geometry" is 188, refer to the column labeled 181-190.
2. Read down the column to locate a sample test question for a given reporting area, such as "Geometry." A student's score suggests that, currently, he or she is likely to get about half of the questions of this difficulty correct.
3. Now look at the questions in the column(s) to the left. The student is likely to get most of these correct, assuming he or she has been instructed in these skills and concepts.
4. The questions in the column(s) to the right will probably require new learning on the student's part.

### Please note:

Test items in this booklet are sample items, and many are not calibrated or field-tested. For purposes of this document, RIT scale alignment is an approximation.

below 161

Number Sense/  
Number Systems

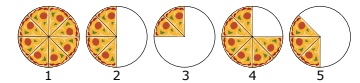
Students understand and apply concepts of numbers including representing, identifying, counting, comparing, ordering, equivalence, and number theory.



How many?

- A. 4
- B. 5
- C. 6
- D. 7
- E. 8

161-170



Which shows  $\frac{1}{2}$  of a pizza?

- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

171-180

68 equals:

- A.  $60 + 8$
- B.  $60 + 80$
- C.  $6 + 8$
- D.  $600 + 8$
- E.  $6 + 80$

181-190

Round 68 to the nearest tens place.

- A. 60
- B. 70
- C. 78
- D. 80
- E. 100

191-200



How many dozen doughnuts?

- A. 2
- B.  $2\frac{1}{2}$
- C. 3
- D. 4
- E. 24

201-210

What is  $\frac{6}{12}$  in simplest form?

- A.  $\frac{1}{2}$
- B.  $\frac{12}{24}$
- C.  $\frac{2}{4}$
- D.  $\frac{1}{6}$
- E.  $\frac{1}{12}$

211-220

Which set contains all the factors of 20?

- A. (5, 10, 15, 20)
- B. (2, 4, 5, 10)
- C. (1, 2, 4, 5, 10, 20)
- D. (1, 2, 4, 5, 8, 10, 15, 20)

221-230

What is the Greatest Common Factor of 54 and 72?

- A. 1
- B. 6
- C. 9
- D. 18
- E. 27

231-240

Which is  $\sqrt{0.64}$ ?

- A. 0.008
- B. 0.08
- C. 0.8
- D. 8

241-250

43,000 equals:

- A.  $4.3 \times 10^3$
- B.  $4.3 \times 10^4$
- C.  $4.3 \times 10^5$
- D.  $43 \times 10^4$
- E.  $43 \times 10^5$

above 250

Which is the simplified form of  $2 + 3\sqrt{-12}$ ?

- A.  $8i\sqrt{3}$
- B.  $2 + 6i\sqrt{3}$
- C.  $-i\sqrt{12}$
- D.  $2 - 3i\sqrt{12}$
- E.  $-4i\sqrt{12}$

Estimation and Computation

Students understand the processes for computation and can accurately compute and solve problems using whole numbers, fractions, decimals, integers, rational, and real numbers.

below 161

$6 + 2 = \square$

- A. 4
- ✓B. 8
- C. 9
- D. 26
- E. 62

161-170

$\begin{array}{r} 63 \\ + 34 \\ \hline \end{array}$

- A. 31
- B. 37
- C. 71
- ✓D. 97
- E. 98

171-180

$\begin{array}{r} 99 \\ - 56 \\ \hline \end{array}$

- A. 34
- B. 42
- ✓C. 43
- D. 53
- E. 155

181-190

$\begin{array}{r} 23 \\ \times 3 \\ \hline \end{array}$

- A. 56
- B. 66
- ✓C. 69
- D. 59
- E. 68

191-200

$\frac{5}{7} - \frac{3}{7} =$

- A.  $\frac{8}{7}$
- B. 2
- ✓C.  $\frac{2}{7}$
- D. 0
- E. 7

201-210

$0.32 \div 8 =$

- A. 4.3
- B. 0.15
- ✓C. 0.04
- D. 0.4
- E. 43.75

211-220

Which is the most appropriate estimation for  $7298 \times 632$ ?

- A.  $7298 \times 632$
- ✓B.  $7000 \times 600$
- C.  $7298.4 \times 632.9$
- D.  $7290 \times 600$
- E.  $8000 \times 600$

221-230

$-6 + (-7) =$

- A. 13
- B. -1
- C. 42
- D. 1
- ✓E. -13

231-240

Which is closest to  $\sqrt{10}$ ?

- A. 3.0
- ✓B. 3.2
- C. 3.5
- D. 5.0

241-250

Which fraction represents a quarter of a half?

- A.  $\frac{1}{16}$
- ✓B.  $\frac{1}{8}$
- C.  $\frac{3}{8}$
- D.  $\frac{1}{2}$
- E.  $\frac{3}{4}$

above 250

Simplify  $5^{-4}$

- A. 625
- B.  $\frac{1}{20}$
- ✓C.  $\frac{1}{625}$
- D. -20
- E. -625



Algebra

Students understand and apply algebraic concepts including extending patterns, simplifying expressions, solving equations and inequalities, using coordinate graphing, and solving functions and matrices.

below 161

Which number does **NOT** fit?

2, 4, 5, 6, 8, 10

- A. 4
- ✓B. 5
- C. 6
- D. 7
- E. 10

161-170

+ 7 = 13

= ?

- ✓A. 6
- B. 9
- C. 10
- D. 11
- E. 18

171-180

14  6 = 8

Which sign goes in the  ?

- A. +
- ✓B. -
- C. ÷
- D. <
- E. >

181-190

52 -  = 12

= ?

- ✓A. 30
- B. 32
- C. 40
- D. 42
- E. 64

191-200

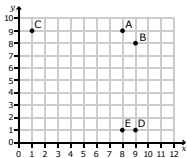
Jill sold bags of raisins. The first day she sold 6 bags, and the second day she sold 12. On the third day she sold 18.

If Jill continues to sell bags following the same pattern, how many bags will she sell on the sixth day?

- A. 54
- B. 48
- ✓C. 36
- D. 30
- E. 24

201-210

Which point of the graph shows the coordinates (9, 8)?



- ✓A. A
- B. B
- C. C
- D. D
- E. E

211-220

If  $6n = 102$ ,  $n$  equals

- A. 12.
- ✓B. 17.
- C. 108.
- D. 196.
- E. 612.

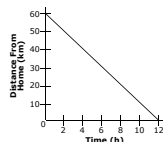
221-230

Evaluate  $gh - b$  if  $g = 4$ ,  $h = 9$ ,  $b = 12$ .

- A. 48
- B. 37
- C. 25
- ✓D. 24
- E. 1

231-240

The graph shows the flight home of a homing pigeon over a distance of 60 km.



What is the pigeon's average speed for the trip?

- A. 600 km/h
- B. 60 km/h
- C. 10 km/h
- ✓D. 6 km/h

241-250

Ken works as a salesperson in a local electronics store. He earns \$200 each week plus 6% commission on his total sales.

Which equation correctly represents Ken's weekly earnings,  $E$ , based on  $s$ , his total sales?

- A.  $E = 0.06s(\$200)$
- B.  $E = 6s + \$200$
- ✓C.  $E = 0.06s + \$200$
- D.  $E = 6s(\$200)$

above 250

What is the  $x$  intercept of  $4x + 2y = 8$ ?






- A. -4
- B.  $\frac{1}{2}$
- ✓C. 2
- D. 4
- E. 8

Geometry

Students understand and apply geometric concepts including identification and classification of 2- and 3-D objects, symmetry and transformations, similar and congruent figures, Pythagorean Theorem, and scale.






below 161

Which shape does **NOT** have any corners?

- A. 
- B. 
- C. 
- ✓D. 
- E. 

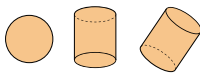
161-170

Which of these shapes is a triangle?

- A. 
- B. 
- C. 
- ✓D. 
- E. 

171-180

The pictures show the same object from different views.








Which picture shows the same object?

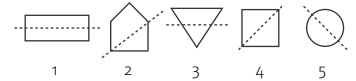
- ✓A. 
- B. 
- C. 
- D. 

181-190

Which shape has symmetry?

- A. 
- B. 
- C. 
- D. 
- ✓E. 

191-200

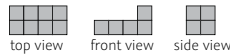


Which figures show a line of symmetry?






- ✓A. 1, 4, and 5
- B. 2, 4, and 5
- C. 4 and 5
- D. 1 and 4
- E. 2, 3, and 4

201-210

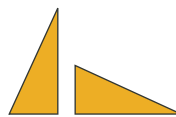
The diagram shows the top, front, and side views of a solid.



Which solid could this be?

- ✓A. 
- B. 
- C. 
- D. 
- E. 

211-220








What type of transformation is shown?

- A. translation
- ✓B. rotation
- C. reflection
- D. dilation
- E. congruent

221-230

Which of these nets would fold into a closed cube?

- ✓A. 
- B. 
- C. 
- D. 
- E. 

231-240

Students at a middle school built a model of their school. The school is 700 ft long and 500 ft wide.

If the students used a scale of 10 ft = 1 in., what are the dimensions of the model?

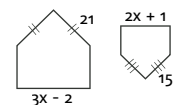
- A. 70 ft by 50 ft
- B. 70 ft by 50 in.
- C. 7 ft by 50 ft
- ✓D. 70 in. by 50 in.
- E. 7 in. by 5 in.

241-250

Using the Pythagorean Theorem,  $a^2 + b^2 = c^2$ , when  $a = 9$  and  $b = 12$ , then  $c = ?$

- A. 8
- B. 21
- ✓C. 15
- D.  $\sqrt{21}$
- E. 225

above 250



If the two pentagons are similar, what is the value of  $x$ ?

- A. 19
- B. 11
- ✓C. 17
- D. 3
- E. 10

Measurement

Students understand and apply concepts of measurement including measuring, conversion, using appropriate units, and calculating perimeter and circumference, area, surface area, volume, and rate.

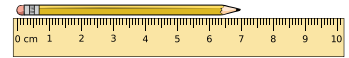
below 161



Who is the shortest?

- A. Annika
- B. Daniel
- ✓C. Lucia
- D. Meiko
- E. Markus

161-170



The pencil is about how many centimeters long?

- A. 4 cm
- B. 5 cm
- C. 6 cm
- ✓D. 7 cm
- E. 8 cm

171-180



■ = 1 square unit

What is the area of the figure?

- A. 18 square units
- B. 9 square units
- ✓C. 20 square units
- D. 16 square units
- E. 5 square units

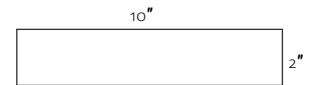
181-190

Dante has 3 dimes, 2 nickels, and 4 pennies.

How much money does Dante have?

- A. 21¢
- B. 29¢
- C. 36¢
- D. 39¢
- ✓E. 44¢

191-200

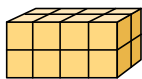


What is the perimeter of this rectangle?

- A. 12 inches
- ✓B. 24 inches
- C. 8 inches
- D. 16 inches
- E. 20 inches

201-210

This solid is built by stacking cubes.



■ = 1 cubic unit

What is the volume of the solid?

- A. 9 cubic units
- B. 10 cubic units
- C. 12 cubic units
- ✓D. 16 cubic units

211-220

4 yards = □

- A. 16 feet
- B. 20 feet
- ✓C. 144 inches
- D. 80 inches
- E. 36 inches

221-230

Regina needs  $2\frac{1}{2}$  pounds of fertilizer for her plants. How many ounces is  $2\frac{1}{2}$  pounds?

- A. 16 ounces
- B. 20 ounces
- C. 30 ounces
- ✓D. 40 ounces
- E. 48 ounces

231-240

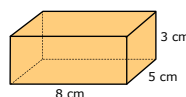


Use the formulas  $C = \pi d$  with 3.14 as an approximation for pi.

Find the circumference of this circle to the nearest inch.

- ✓A. 157 in.
- B. 150 in.
- C. 1570 in.
- D. 53.14 in.
- E. 46.86 in.

241-250



Calculate the surface area of this rectangular solid.

- A. 79 cm<sup>2</sup>
- B. 110 cm<sup>2</sup>
- C. 120 cm<sup>2</sup>
- D. 128 cm<sup>2</sup>
- ✓E. 158 cm<sup>2</sup>

above 250

The diameter of sphere A is twice the size of sphere B.

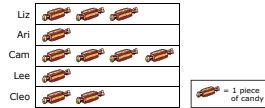
What is the ratio of the volume of sphere A to the volume of sphere B?

- ✓A. 8:1
- B. 1:8
- C. 2:1
- D. 1:2
- E. 1:1

Statistics and Probability

Students understand and apply concepts of organizing, reading, and interpreting graphs, collecting and analyzing data, and interpreting and predicting using probability and combinations.

below 161

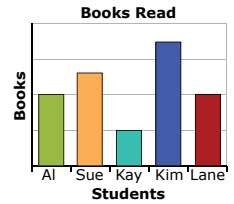


Who has the most candy?

- A. Liz
- B. Ari
- ✓C. Cam
- D. Lee
- E. Cleo

161-170

Who read the most books?



- A. Al
- B. Sue
- C. Kay
- ✓D. Kim
- E. Lane

171-180

Student Council Election Results	
Student	Number of Votes
Ann	
Mark	
Sue	

How many votes did Mark get?

- A. 20
- ✓B. 16
- C. 22
- D. 17
- E. 19

181-190

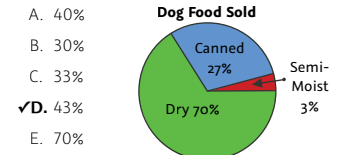
Ken wants to bake cookies for his class. He wants to know what cookie to bake.

Which question is best to find out what kind of cookies to bake?

- A. Do you like to eat cookies?
- B. What is your favorite dessert?
- C. How many cookies do you want to eat?
- ✓D. What is your favorite cookie?

191-200

How much more dry dog food is sold than canned dog food?



- A. 40%
- B. 30%
- C. 33%
- ✓D. 43%
- E. 70%

201-210

A box contains 13 balls. 3 balls are red, 5 are blue, 4 are orange, and 1 is yellow.

What is the probability of picking a red ball?

- A.  $\frac{3}{5}$
- B.  $\frac{3}{10}$
- C.  $\frac{1}{13}$
- ✓D.  $\frac{3}{13}$
- E.  $\frac{5}{13}$

211-220

Diana received scores of 100, 63, 80, 85, and 92 on her math tests.

What is her mean (average) score?

- A. 83
- ✓B. 84
- C. 85
- D. 86
- E. 87

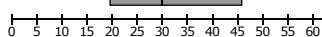
221-230

If the average of five numbers is 50 and four of the numbers are 25, 75, 30, and 70, what is the fifth number?

- A. 75
- ✓B. 50
- C. 30
- D. 20
- E. 10

231-240

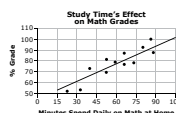
Look at the box-and-whisker plot.



Which number represents the median of the data?

- A. 20
- ✓B. 30
- C. 32.5
- D. 35
- E. 45

241-250



If Sally studies math for 45 minutes a day at home, predict her math grade based on the scatter plot.

- A. 50
- ✓C. 70
- B. 60
- D. 80
- E. 90

above 250

Test Grades: 86, 78, 82, 70, 90, 76, 94, 84, 70, 80, 80, 70

For these test grades, which measures of central tendency are equal to 80%?

- ✓A. mean and median only
- B. mean only
- C. mean, median, and mode
- D. mean and mode only
- E. mode and median only



Problem Solving, Reasoning, and Proofs

Students understand and apply the processes of problem solving including understanding and representing problems, developing solution strategies, verifying results, and explaining reasoning strategies and proofs.

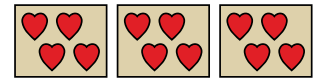
below 161

Jo has 3 books. Mom gave her 2 more.

How many books does Jo have?

- A. 2
- B. 3
- C. 4
- ✓D. 5
- E. 6

161-170



Lia wants to find out the number of candy hearts in these boxes.

Which number sentence could Lia use?

- ✓A.  $4 + 4 + 4 = \square$
- B.  $4 + 4 = \square$
- C.  $3 + 4 = \square$
- D.  $3 + 3 + 3 = \square$
- E.  $4 + 4 + 4 + 4 = \square$

171-180

There are 12 donuts in a box. 7 children each eat 1 donut. They want to know how many donuts are left.

Which number sentence answers the question?

- ✓A.  $12 - 7 = \square$
- B.  $7 - \square = 12$
- C.  $12 + 7 = \square$
- D.  $12 - 1 = \square$
- E.  $1 + \square = 12$

181-190



Two children will share the dolls equally. How many dolls will each get?

- A. 1
- B. 2
- ✓C. 4
- D. 8

191-200

Suzana is making fruit salad. She buys 2 bananas, 3 apples, 1 pear, and 25 grapes. She paid \$3.82 for the fruit. How many pieces of fruit did she buy?

What information is NOT necessary to solve this problem?

- A. 2 bananas
- B. 3 apples
- C. 1 pear
- D. 25 grapes
- ✓E. \$3.82

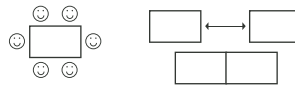
201-210

Maria is 5 years older than her brother José. Next year she will be 14 years old.

How old is José now?

- ✓A. 8
- B. 9
- C. 10
- D. 18
- E. 19

211-220



If you have tables that seat 6 people each, as shown, how many people can you seat if you push two such tables together on the short side?

- A. 12
- B. 8
- C. 6
- D. 11
- ✓E. 10

221-230

A phone company charges \$0.20 per minute for the first three minutes and \$0.07 for each additional minute.

Which is the cost of a 24 minute call?

- A. \$1.47
- B. \$1.67
- C. \$1.68
- ✓D. \$2.07
- E. \$2.08

231-240

If 24 girls in a class are 60% of the class, how many students are in the class?

- A. 16
- B. 24
- C. 32
- ✓D. 40
- E. 48

241-250

A \$30.00 pair of jeans is discounted 20%.

If sales tax is 5%, what will be the final price for the jeans?

- A. \$22.80
- B. \$24.00
- C. \$24.20
- ✓D. \$25.20
- E. \$28.35

above 250

A block of ice loses  $\frac{1}{6}$  of its weight each hour that it sits in the sun.

If a 180 pound block of ice is placed in the sun, what will it weigh after 2 hours?

- A. \$1.47
- B. \$1.67
- C. \$1.68
- ✓D. \$2.07
- E. \$2.08

# RIT

## Reference Chart for MPG Reading



MAP tests produce scores that make it possible to monitor student growth from year to year along developmental curriculum scales or continua. The chart inside shows examples of the kinds of work students can do at various points along the MAP RIT scale, assuming they have been exposed to content. This type of information is helpful in supporting appropriate instruction.

Please note that each subject area has a unique alignment to the RIT scale. As a result, scores between subjects are not equivalent.

### How to use the charts:

1. Find the column containing the student's score for a particular subject. For example, if the student's score in "Foundational Skills" is 188, refer to the column labeled 181-190.
2. Read down the column to locate a sample test question for a given reporting area, such as "Foundational Skills." A student's score suggests that, currently, he or she is likely to get about half of the questions of this difficulty correct.
3. Now look at the questions in the column(s) to the left. The student is likely to get most of these correct, assuming he or she has been instructed in these skills and concepts.
4. The questions in the column(s) to the right will probably require new learning on the student's part.

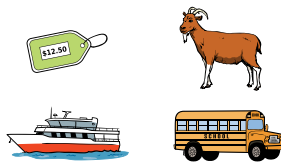
Please note:

Test items in this booklet are sample items, and many are not calibrated or field-tested. For purposes of this document, RIT scale alignment is an approximation.

**Phonological Awareness**

Students can identify, blend, isolate, and manipulate phonemes. They recognize rhyme and count syllables in words.

below **131**



Listen to the names of the pictures: tag, goat, boat, bus.  
 Click on the two pictures that rhyme.

*(Audio plays for the student, but text is not shown on the screen.)*

**131-140**



Listen to the starting sound of each word.  
 Ring, rake, cone, rope.

Click on the one with a different starting sound than the others.

**141-150**



**Why does the bus stop in this picture?**

- It is raining.
- A train is passing.
- A bike is passing.
- The people want to ride.

**151-160**



Listen to the sounds and put them together: /j/.../am/.

Choose the picture that shows this word: /j/.../am/.

**161-170**



Look at the pictures.

Click on the word that has the long /A/ sound, as in "late."

Cat, cake, key, car.

**171-180**



Listen to the word: clap. Take the /l/ sound away.

Which picture show this new word?

- Cup, cap, clip, clock.

**181-190**



Listen to the word: mail. Take the /A/ sound away, and put the /O/ sound in its place.

Which picture is the new word?

- Lamp, mole, cow, mat.

above **191**



1 2 3 4

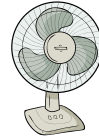
Listen to the word: butterfly.

How many syllables are in the word butterfly?

**Phonics**

Students know and apply letter-sound correspondences and regular decoding patterns. They use spelling patterns, rhyming, and syllabication rules to decode words.

below **131**



Which letter makes the sound /f/, as in “fan”?

**131-140**



**Nn**



Look at the letter: **N**.  
 Click on the picture that begins with the letter **N**.  
 Kite, dog, pie, net.

*(Audio plays for the student, but text is not shown on the screen.)*

**141-150**



**H B C**

Look at the pictures.  
 Match the letters to the beginning sound of each picture.  
 Bat, hat, cat.

**151-160**



**m g s p**

Listen to the word: “top.”  
 Which letter makes the ending sound in the word “top”?

**161-170**



Click on the letters that make the ending sound in this picture: sandwich.  
*(Audio plays for the student, but text is not shown on the screen.)*

**171-180**



Listen to the word: coin.  
 Click on the word “coin.”  
*(Audio plays for the student, but text is not shown on the screen.)*

**181-190**

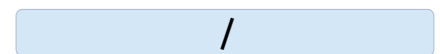


Listen to the sound: /O/.  
 Click on the letter pair that makes the sound, /O/.

above **191**



**surprise**



Listen to the word: surprise.  
 Move the slash to divide the word into its syllables.

Concepts of Print

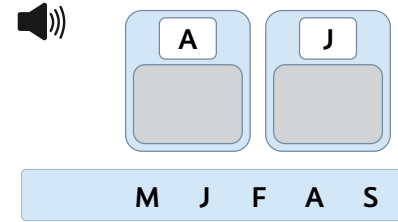
Students understand foundational concepts about words, text, and parts of books. They show understanding of environmental print. They identify letter names and apply knowledge of alphabetical order.

below **131**



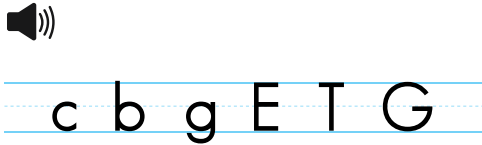
Look at the pictures.  
 Click on the sign that says "stop."

**131-140**



Look at the letters.  
 Move the matching letters to the boxes.

**141-150**



Look at the letters.  
 Click on the letter "B."

**151-160**



The tree is tall and green.

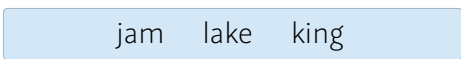
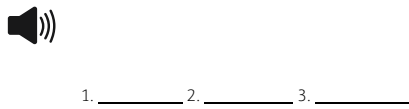
Click on the word that has a capital letter.

**161-170**



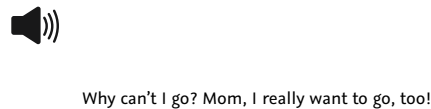
Look at the book.  
 "Music for Mo, written by Autumn Mayo,  
 illustrated by Yuri Howard."  
 Click on the author of the book.

**171-180**



Put the words in ABC order.

**181-190**



Look at the sentences.  
 Click on the exclamation mark.

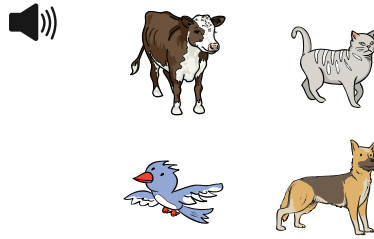
above **191**

Concepts of Print is not applicable at this RIT range

**Vocabulary and Word Structure**

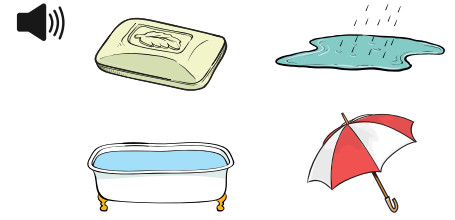
Students recognize sight words, compare word meanings, and use context clues. They analyze words for compounds, roots and affixes, and they form contractions.

below **131**



Look at the pictures.  
Click on the bird.

**131-140**



Look at the pictures.  
Click on the bathtub.

**141-150**



Listen to the clues: It runs. It has legs. It has fur.  
Which picture matches all of the clues?  
Frog, boy, dog, truck.

**151-160**



Listen to the sentence.  
"John sleeps in this bed."  
Click on the word "his."

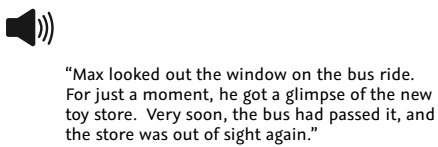
**161-170**



The panting dog jumped over the buckets.

Listen to the sentence.  
"The panting dog jumped over the buckets."  
Click on the word with an ending that means "in the past."

**171-180**

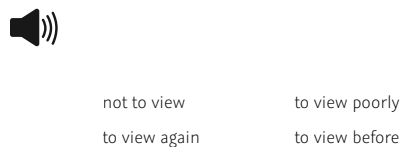


"Max looked out the window on the bus ride. For just a moment, he got a glimpse of the new toy store. Very soon, the bus had passed it, and the store was out of sight again."

Which means the same as glimpse?

- a quick look
- a gift card
- a daydream
- a buzzing sound

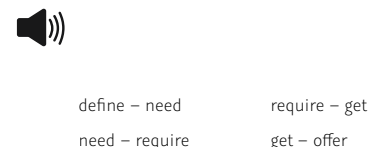
**181-190**



not to view	to view poorly
to view again	to view before

What does "preview" mean?

above **191**



define – need	require – get
need – require	get – offer

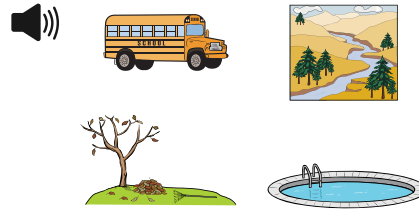
Which pair of words means the same thing?



**Comprehension**

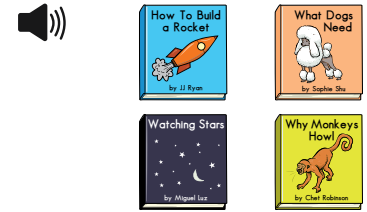
Students understand what they hear read aloud, and later read independently with understanding. They identify literal meanings, make inferences, and evaluate texts.

below **131**



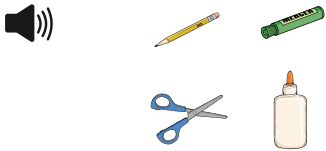
**Listen to the story.**  
**Which picture shows where the story probably takes place?**

**131-140**



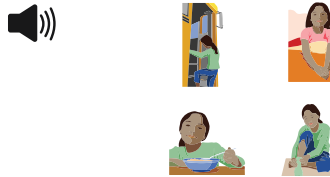
**Maureen wants to learn more about taking care of dogs.**  
**Click on the book that she should read.**

**141-150**



**Look at the pictures.**  
 "Ronnie took something back to the art shelf. He made sure its lid was on tight, so things would not get sticky."  
**Which item did Ronnie take back to the art shelf?**

**151-160**



**Listen to the story.**  
**What does Jayna do before she eats breakfast?**  
*(This is a listening comprehension item. The passage is not presented here.)*

**161-170**

Wolves .....	6
Foxes .....	10
Dogs .....	14
Bears .....	20
Cats .....	25

**Read the table of contents.**  
**Click on the page where information about dogs can be found.**

**171-180**

<input type="radio"/>	Skating is the best sport for kids.
<input type="radio"/>	Hockey is a team sport on skates.
<input type="radio"/>	In speed skating, racers try to finish first.
<input type="radio"/>	Figure skating is the most fun.

**Read the passage.**  
**Click on ALL the sentences that are facts.**

**181-190**

Mr. Lee made lunch for his sons each day. Each son liked some foods best. The oldest son liked nuts and fruit. The middle son liked fruit and string cheese. The youngest son liked soup, fruit, and juice.

**Read the passage.**  
**Which food did every son like?**

above **191**

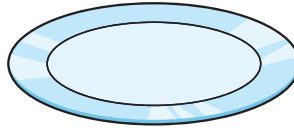
Birds are one of the few animals that can fly, so they go places other animals cannot. Robins build their nests high up in trees. There is a good reason for this. Robin parents stay in their nests with the babies as much as possible. But they must leave to find food. Sometimes baby birds must be left alone. This would be dangerous if the nests were on the ground because other animals could get to the baby birds. But since the nests are in trees, few animals can reach them. Baby robins are safer up in the trees than on the ground.

**Read the story. What is the main idea of the passage?**  
 Birds are one of the few animals that can fly.  
 Robins build their nests in trees.  
 Sometimes baby birds must be left alone.  
 Baby robins are safer up in trees than on the ground.

**Writing**

Students use steps in the writing process, including using conventions of language and grammar. They understand language structures such as phrases, sentences, and paragraphs.

below **131**



**Look at the plate.**  
**Put the apple on the plate.**

**131-140**



**Look at the picture.**  
**Where is the dog?**

behind the girl  
 next to the girl

below the girl  
 on the girl

**141-150**



are boys The wet

**Listen to the sentence: The boys are wet.**  
**Move the words to the lines to write the sentence.**

**151-160**



a gets He book

**Use all the words to write a sentence about this picture.**

**161-170**



The class pet mouse is named Marilyn.

**Find the mistake in the sentence.**  
**Click on the word that should begin with a capital letter.**

**171-180**



Roses can have menny thorns.



a e g i m n u w y

**Read the sentence.**  
**“Many” is not spelled correctly. Use the letters to spell the word correctly.**

**181-190**

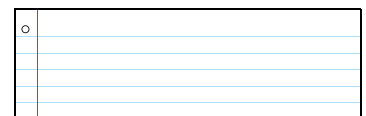


The United States flag has 50 stars.  
 Each star on the flag stands for one state.  
 My family and I live in the state of Oregon.  
 The United States flag has only three colors.  
 The colors are red, white, and blue.

**Nick wrote this report about the United States flag for social studies class.**

**Click on the sentence that should NOT be in Nick’s report for class.**

above **191**



When they finally got home, they made an apple pie.  
 Gabe was busy on Sunday afternoon.  
 First, his mom took him to the park.  
 At the grocery store, Gabe chose apples.  
 After the park, they went to the grocery store.

**Read the sentences.**  
**Put the sentences in the best order to make a paragraph.**

# RIT

## Reference Chart for MPG Mathematics



MAP tests produce scores that make it possible to monitor student growth from year to year along developmental curriculum scales or continua. The chart inside shows examples of the kinds of work students can do at various points along the MAP RIT scale, assuming they have been exposed to content. This type of information is helpful in supporting appropriate instruction.

Please note that each subject area has a unique alignment to the RIT scale. As a result, scores between subjects are not equivalent.

### How to use the charts:

1. Find the column containing the student's score for a particular subject. For example, if the student's score in "Geometry" is 188, refer to the column labeled 181-190.
2. Read down the column to locate a sample test question for a given reporting area, such as "Geometry." A student's score suggests that, currently, he or she is likely to get about half of the questions of this difficulty correct.
3. Now look at the questions in the column(s) to the left. The student is likely to get most of these correct, assuming he or she has been instructed in these skills and concepts.
4. The questions in the column(s) to the right will probably require new learning on the student's part.

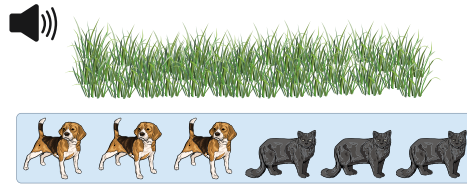
Please note:

Test items in this booklet are sample items, and many are not calibrated or field-tested. For purposes of this document, RIT scale alignment is an approximation.

**Problem Solving**

Students understand and represent word problems, and they use strategies to solve and verify answers. They apply logic and reasoning, and they work with conjecture and proof.

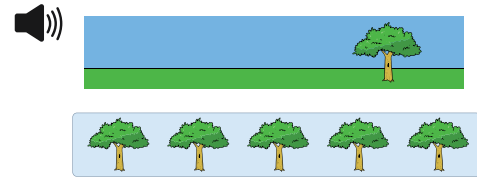
below **131**



Listen to the story problem: Ann has 1 dog and 1 cat.

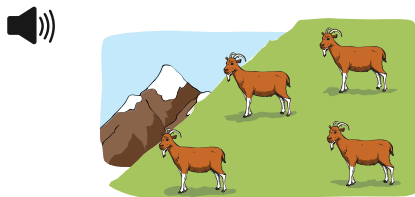
Move Ann's pets to the grass.

**131-140**



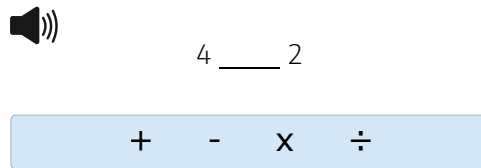
Listen to the story problem: There is 1 tree in the yard. 2 more get planted in the yard. Move the trees to the yard to show how many there are altogether.

**141-150**



Listen to the story problem: There are four goats on the hillside. Three goats leave the hillside. Click on the goats to show how many are on the hillside now.

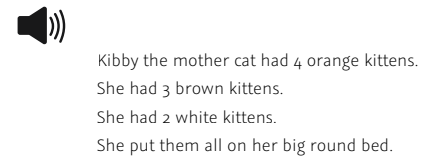
**151-160**



Listen to the story problem: Walter baked 4 pies yesterday and 2 pies today. He wants to know how many pies he baked in all.

What symbol shows what Walter should do?

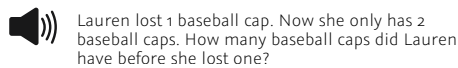
**161-170**



Listen to the story problem: How many kittens did Kibby have?

Click on the sentence that is **NOT** needed to solve the problem.

**171-180**



$$\square - \square = 2$$

1 2 3 4 5

Listen to the story problem.

Move the numbers to the boxes to show the problem.

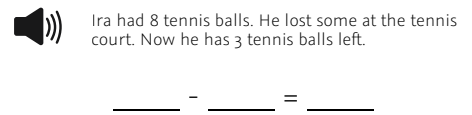
**181-190**



Listen to the clues to find Mr. Lopez. You can use the clues to help you cross out people who are not Mr. Lopez.

Put a circle on Mr. Lopez.

above **191**



0 1 2 3 4 5 6 7 8 9

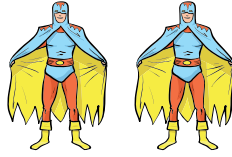
Listen to the story problem.

Move the numbers to the lines to show the number sentence for the story problem.

**Number Sense**

Students count, and they identify and represent numbers, including work with place value and fractions. They understand relative position and magnitude.

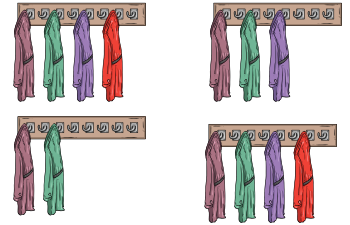
below **131**



- 1
- 2
- 3
- 4

Look at the picture.  
 How many superheroes are there?

**131-140**



Look at the coat racks.  
 Click on the rack that has the fewest coats.

**141-150**



Click on 9 cows.

**151-160**



- 20
- 15
- 14
- 17
- 4

Click on the number that is 1 more than 13.

**161-170**



- 1
- 21
- 20
- 201

What number do the blocks show?

**171-180**



347

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Look at the number.  
 What is 100 more than 347?

**181-190**



- 532
- 
- 591
- 358
- 
- 358
- 823
- 
- 453

- <
- >
- =

Look at the numbers.  
 Put the correct symbol in each of these problems to make them true.

above **191**



6 hundreds and 5 ones

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Which number is described?

**Computation**

Students add and subtract, and they use models to prepare for multiplication and division.

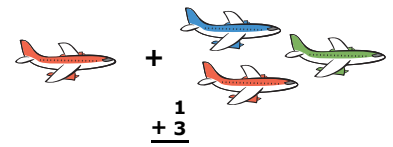
below **131**



1 2 3 4 5

Look at the trucks.  
 Two trucks and one more truck is how many trucks altogether?

**131-140**



1 2 3 4 5 6 7 8 9 10

Look at the planes.  
 1 plane plus 3 planes equals how many planes?

**141-150**



$2 + 2 = \underline{\quad}$

1 2 3 4 5 6 7 8 9 10

What is the answer?

**151-160**



$7 - 4 = \underline{\quad}$

0 1 2 3 4 5 6 7 8 9

Look at the 7 keys. Take away 4 keys.  
 What is the answer?

**161-170**



$7 + 8 = \underline{\quad}$

14 15 16 17 18

What is the answer?

**171-180**

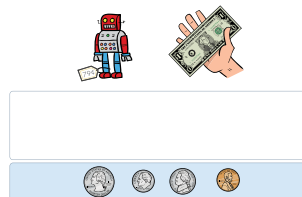


         shells

30	35	43	48
78	112	121	

Bella had 78 shells in her collection. She gave 43 shells away to her friends.  
 How many shells are left in Bella's collection?  
 You can move base ten blocks to help you solve the problem.

**181-190**



Listen to the story: Julia bought a robot toy for 79 cents. She paid for it with one dollar.  
 Show the change that Julia should receive. Take as many coins as you need from each stack.

above **191**



$$\begin{array}{r} 2 \\ \times 7 \\ \hline \end{array}$$

1 2 3 4 5 6 7 8 9

What is the answer?



**Measurement and Geometry**

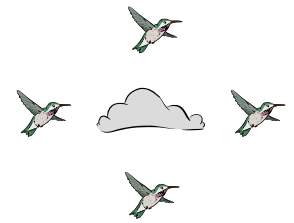
Students compare and order objects using tools, units, and estimation. They identify shapes and lines in two and three dimensions and describe attributes. They work with spatial transformations, symmetry, and congruence.

below **131**



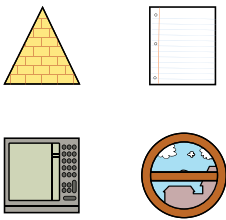
Look at the picture.  
 Click on the shortest student.

**131-140**



Look at the picture.  
 Which bird is over the cloud?

**141-150**



Look at the pictures.  
 Which is shaped like a circle?

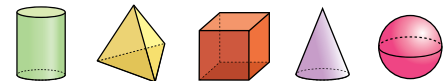
**151-160**



October						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Look at the calendar.  
 Click on October 14th.

**161-170**



Look at the shapes.  
 Click on the pyramid.

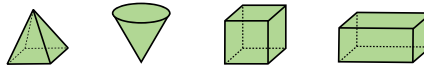
**171-180**



3:45 9:15 8:20 4:40

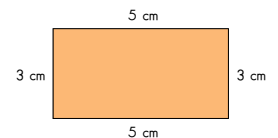
Look at the clock.  
 What time is shown on the clock?

**181-190**



Look at the shapes.  
 Click on the shapes that have six faces.

above **191**



10 11 12 13 14  
 15 16 17 18 19 20

What is the perimeter of the rectangle?

**Statistics and Probability**

Students collect, organize, display and analyze data. They understand probability and apply it to make predictions.

below **131**



Look at the pictures.

Click on the picture that is different from the others.

**131-140**



Look at the group of objects. The objects in this group belong together.



Click on the object that belongs with the group.

**141-150**



Gold Star Stickers	
Sarah	☆☆☆
Pablo	☆
Jamal	☆☆☆☆☆
Cher	☆☆
Maria	☆☆☆☆

Look at the sticker chart.

Click on the name of the student with the most star stickers.

**151-160**



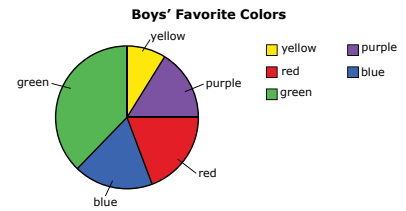
Favorite Dinner	
5	
4	
3	
2	
1	
	Hamburger Hot Dog

1 2 3 4 5 6

Look at the graph.

How many students chose hot dog as their favorite dinner?

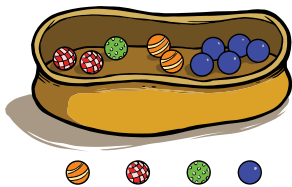
**161-170**



Look at the circle graph: "Boys' Favorite Colors."

Which color did the most boys choose?

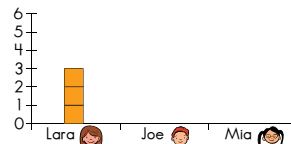
**171-180**



Look at the picture. Saba closes her eyes and pulls one gumball out of the bag.

Which gumball is Saba LEAST likely to pull from the bag?

**181-190**



Listen to the story: Lara has 3 cats, Joe has 5 fish, and Mia has 2 dogs.

Move the squares to complete the bar graph and show how many pets each student has.

above **191**



Lunches	
Hot lunch	
Cold lunch	

= 2 people

2 8 9 16 18

Look at the graph. Students were asked if they had hot lunch or cold lunch.

How many students were surveyed in all?

**Algebra**

Students recognize and analyze patterns and functions. They understand and apply algebraic concepts.

below **131**



What comes next in this pattern?

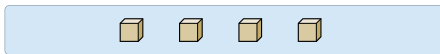
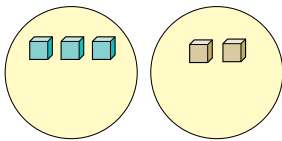
**131-140**



Look at the pattern.

Move the beans to the boxes to continue the pattern.

**141-150**



Look at the two groups.  
 Move cubes to the circles to make the groups equal.

**151-160**



Start with 6.  
 Add 0 to it.

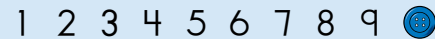
Which statement is correct?

- The answer is 6.
- The answer is bigger than 6.
- The answer is smaller than 6.

**161-170**

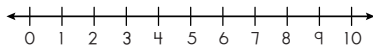


$4 + \underline{\quad} = 6$



You can use the buttons to help you find the answer to the problem.  
 Move the correct number to the blank line to make the sentence true.

**171-180**



$3 = \underline{\quad} - 4$



You can use the number line and arrows to help you find the answer.

Move the correct number to the blank to make the sentence true.

**181-190**



The Lions had 47 points at halftime.  
 At the end of the game they had 89.

How many points did the Lions score after halftime?

           points



above **191**



- $423 \times 0 = 1$
- $423 \times 0 = 0$
- $423 \times 0 = 423$
- $423 \times 0 = 4230$

Which problem is true?

# RIT

## Reference Chart for Science\*



MAP tests produce scores that make it possible to monitor student growth from year to year along developmental curriculum scales or continua. The chart inside shows examples of the kinds of work students can do at various points along the MAP RIT scale, assuming they have been exposed to content. This type of information is helpful in supporting appropriate instruction.

Please note that each subject area has a unique alignment to the RIT scale. As a result, scores between subjects are not equivalent.

### How to use the charts:

1. Find the column containing the student's score for a particular subject. For example, if the student's score in "Physical Sciences" is 188, refer to the column labeled 181-190.
2. Read down the column to locate a sample test question for a given reporting area, such as "Physical Sciences." A student's score suggests that, currently, he or she is likely to get about half of the questions of this difficulty correct.
3. Now look at the questions in the column(s) to the left. The student is likely to get most of these correct, assuming he or she has been instructed in these skills and concepts.
4. The questions in the column(s) to the right will probably require new learning on the student's part.

Please note:

Test items in this booklet are sample items, and many are not calibrated or field-tested. For purposes of this document, RIT scale alignment is an approximation.

below 181

Physical Sciences

Students understand the ideas about the interactions of matter, the relationship between force and motion, and how energy forms transfer and transform.

Which is a solid?

- A. air
- B. milk
- ✓C. rock
- D. water

181-190

Which action is an example of melting?

- ✓A. heating a block of ice until the ice turns to water
- B. warming a pan of water until the water is all gone
- C. stirring some sugar in water until the sugar is invisible
- D. cooling water in the freezer until the water becomes solid

191-200

A student experiments with magnets.

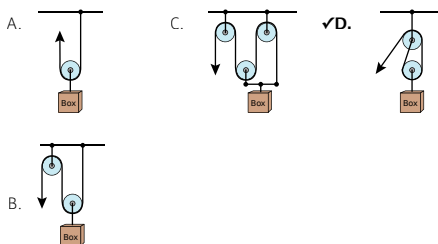
Which group of magnets has attractive forces between all 3 magnets?

- ✓A.
- B.
- C.
- D.

201-210

Students designed four pulley systems to lift a box.

Which pulley system will lift the box with the LEAST input force?



211-220

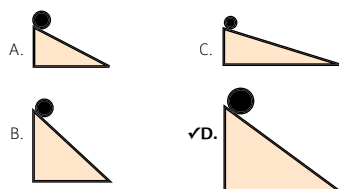
Which observation indicates that a substance is a mixture?

- ✓A. It separates into 2 layers after 24 hours.
- B. It remains the same color when cut in half.
- C. It turns black and emits smoke when burned.
- D. It breaks into 4 pieces when hit with a hammer.

221-230

Solid steel balls are located on ramps as shown.

Which ball has the greatest gravitational potential energy?



231-240

What is the hydronium concentration of a basic solution?

- A.  $[H^+] = 1 \times 10^9$
- B.  $[H^+] = 1 \times 10^{-9}$
- C.  $[H^+] = 1 \times 10^1$
- ✓D.  $[H^+] = 9 \times 10^{-1}$

above 241

Which chemical equation represents a neutralization reaction?

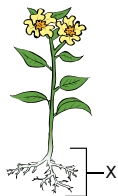
- A.  $CaCO_3(s) \rightarrow CO_2(g) + CaO(s)$
- B.  $2 HCl(aq) + 2 K(s) \rightarrow 2 KCl(aq) + H_2(g)$
- C.  $CH_4(g) + O_2(g) \rightarrow CO_2(g) + H_2O(g)$
- ✓D.  $NaOH(aq) + HCl(aq) \rightarrow NaCl(aq) + H_2O(l)$

below **181**

Life Sciences

Students understand the ideas about the structure and function of organisms, how matter and energy move through ecosystems, how heredity affects organisms, and how biological evolution affects the unity and diversity of life.

The diagram shows the parts of a plant.



Which part is labeled with the X?

- A. flower
- B. leaf
- ✓C. root
- D. stem

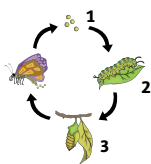
**181-190**

Which phrase describes all predators?

- A. animals that eat plants and fungi
- B. animals that hibernate in the winter
- ✓C. animals that hunt other animals for food
- D. animals that live in herds with other animals

**191-200**

Students made this model of the life cycle of a butterfly.



How should they label stages 1, 2, and 3?

- A. egg, pupa, and larva
- B. larva, egg, and pupa
- ✓C. egg, larva, and pupa
- D. pupa, larva, and egg

**201-210**

What is a function of the respiratory system in animals?

- A. to move blood
- B. to detect sound
- ✓C. to obtain oxygen
- D. to break apart food

**211-220**

Where does photosynthesis happen in plants?

- ✓A. chloroplasts
- B. epidermis
- C. roots
- D. stomata

**221-230**

A student plans to cross 2 purebred guinea pigs. One has black fur and one has white fur. The color of a guinea pig's fur depends on a single gene pair. Black fur is dominant to white fur.

If there are 6 guinea pig offspring, what fur color will they most likely have?

- A. 3 with black fur and 3 with white fur
- B. 4 with black fur and 2 with white fur
- C. 5 with black fur and 1 with white fur
- ✓D. 6 with black fur and 0 with white fur

**231-240**

A cell containing 10 chromosomes divides by mitosis.

How many chromosomes will each daughter cell contain?

- A. 5
- ✓B. 10
- C. 15
- D. 20

above **240**

Why is DNA the storage molecule for hereditary information?

- A. It contains the nitrogenous base uracil.
- B. It contains strong covalent bonds.
- ✓C. It can be replicated and transcribed.
- D. It translates the genetic code.

below **181****Earth and Space Sciences**

Students understand concepts related to the weather and climate on Earth, the cycles of Earth, plate tectonics and how Earth changes over time, as well as the concepts related to the Solar System and the Universe.

**Which object is shaped most like Earth?**

- A. an oval egg
- ✓B. a round ball
- C. a flat pancake
- D. a square block

**181-190****Which observation of weather usually indicates rain?**

- A. The wind speed is low.
- ✓B. The sky has many clouds.
- C. The air temperature is high.
- D. The wind direction is from the north.

**191-200****Which statement describes the Northern Hemisphere of Earth at the beginning of winter?**

- A. It is tilted toward the Sun.
- ✓B. It is tilted away from the Sun.
- C. It is rotating faster than the Southern Hemisphere.
- D. It is rotating slower than the Southern Hemisphere.

**201-210****How does air in Earth's atmosphere move while being heated?**

- A. around in circles
- ✓B. upward in columns
- C. downward in funnels
- D. horizontally in layers

**211-220****Which planet has the greatest orbital speed?**

- A. Earth
- ✓B. Mercury
- C. Neptune
- D. Saturn

**221-230****A mineral sample has large crystals.****Where did this mineral sample likely form?**

- A. on the ocean floor
- B. within a quickly evaporating brine pool
- C. in the air after being ejected from a volcano
- ✓D. along the edges of a slowly cooling magma pool

**231-240****How can large droplets of water become tiny droplets of water in the water cycle?**

- A. They can evaporate, precipitate, and then condense.
- B. They can condense, evaporate, and then precipitate.
- C. They can precipitate, condense, and then evaporate.
- ✓D. They can precipitate, evaporate, and then condense.

above **240****Which evidence does NOT support the theory of plate tectonics?**

- A. the mapping of glacial features on different continents
- B. the matching of fossil types in South America and Africa
- C. the mid-ocean ridges with alternating magnetic stripes on the seafloor
- ✓D. the mass extinction of species on a continent within a small period of time



below **181**

**Scientific Inquiry**

Students plan, perform, and evaluate scientific investigations. The key skills they use include observing, questioning, predicting, hypothesizing, and inferring from data.

Students are observing rocks on a beach. They need to write scientific descriptions of these rocks.

Which group of words is best to use in their notebooks?

- A. red, tall, happy, wet
- B. old, round, gray, funny
- ✓C. hard, smooth, curved, large
- D. young, happy, lonely, windy

**181-190**

A student did an experiment to answer the question, “Do red candles burn faster than white candles?” The student lit the red candles and measured the time for them to burn. The student kept the unlit white candles as controls. Using these results, the student could not answer the question.

What was wrong with the student’s experiment?

- A. The student’s timer did not operate properly.
- B. Red was not a good color to choose for the experiment.
- ✓C. The time for the white candles to burn was not measured.
- D. The student did not repeat the experiment at least 3 times.

**191-200**

A student read that when salt, sugar, and water are combined, the mixture becomes a candy called saltwater taffy.

How should the student test this idea?

- ✓A. Mix salt, sugar, and water and observe what happens.
- B. Take a vote among friends who have eaten saltwater taffy.
- C. Buy some saltwater taffy and see if it is a mixture with salt in it.
- D. Grind up some saltwater taffy to see if you get salt, sugar, and water.

**201-210**

Different types of insects have a different kinds of mouthparts. Mouthparts may relate to the insect’s diet.

Which would be a testable hypothesis to help explain the different mouthparts?

- ✓A. Insects with similar mouthparts will have similar diets.
- B. Insects use sharp mouthparts for protection.
- C. Bigger insects have bigger mouthparts.
- D. Climate affects the diet of insects.

**211-220**

A student grew 3 plants controlling all variable but one. The first plant was grown under red light, the second plant was grown under green light, and the third plant was grown under blue light.

Which question was the student probably investigating?

- A. How does the type of soil affect the rate of plant growth?
- ✓B. How does the color of light affect the rate of plant growth?
- C. How does the amount of water affect the rate of plant growth?
- D. How does the amount of sunlight affect the rate of plant growth?

**221-230**

Students want to investigate the motion of objects. They have a metric ruler, a stopwatch, a ramp, and 4 types of balls (baseball, tennis ball, golf ball, and soccer ball).

Which hypothesis can the students test using only their equipment?

- A. Balls will roll slower down a rougher ramp.
- ✓B. A tennis ball will roll down a ramp faster than a golf ball.
- C. The ball with the greatest temperature will accelerate the most.
- D. The heaviest ball will roll down a ramp in the least amount of time.

**231-240**

Which is the simplest question to answer using a scientific investigation?

- A. How does a pendulum function?
- B. What animal makes the best pet for young children?
- ✓C. Which type of soil produces the tallest tomato plants?
- D. Why do some birds like sunflower seeds better than thistle seeds?

above **240**

A research biologist had statistically significant laboratory results.

Why were the results significant?

- A. The results confirmed the hypothesis.
- ✓2. The results could not be caused by chance alone.
- C. The results will probably be valuable to humankind.
- D. The results were very similar to the results of another biologist.

below 181

Nature of Science

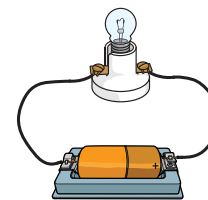
Students show understanding of scientific theories, inference, systems thinking, and the interactions between science and technology.

What is always needed to cause a change in a system?

- A. air
- ✓B. energy
- C. force
- D. water

181-190

The picture shows a real electric circuit.



How do scientists and engineers think of this real electric circuit?

- A. as a cell
- B. as a cycle
- C. as a model
- ✓D. as a system

191-200

A student poured water into a bowl and set the bowl in front of a window. The student recorded observations and inferences until all the water was gone.

Which statement from the student's notebook is an inference, and **NOT** an observation?

- A. Half of the water is gone by day two.
- ✓B. Water evaporated faster on sunny days.
- C. There is a line of residue in the bowl where the water was.
- D. The water temperature is the same as the room temperature.

201-210

Students observed some tomato plants. They found that the ones that grew the tallest were exposed to 10 hours of sunlight.

What is the **best** way for students to report their finding?

- A. Plants need sunlight to grow.
- B. Plants grow best with 10 hours of sunlight.
- ✓C. Tomato plants grow tall with 10 hours of sunlight.
- D. Tomato plants need to hours of sunlight to grow the tallest.

211-220

Which action is **NOT** how science and technology usually interact?

- ✓A. Science provides technology with tools.
- B. Science produces a demand for new technologies.
- C. Science knowledge can limit technologies that are produced.
- D. Science discovers information that can be applied in new technologies.

221-230

Which is an input and an output in plant systems?

- A. light
- ✓B. oxygen
- C. minerals
- D. nitrogen

231-240

Which statement **best** describes scientific theories?

- A. They are often wrong.
- B. They are educated guesses.
- C. They can be proven correct.
- ✓D. They are explanations of facts.

above 240

Which sentence represents the use of Occam's Razor in the process of science?

- A. Theories should be tested with many repetitions of all possible experiments.
- B. When new data does not support an established theory, reject the theory and start over.
- ✓C. When two competing theories make the same prediction, the theory that is simpler is better.
- D. Testing a theory with controlled experiments is better than testing with broad investigations.



Northwest Evaluation Association

*Partnering to help all kids learn®*

Founded by educators 40 years ago, Northwest Evaluation Association™ (NWEA™) is a global not-for-profit educational services organization known for our flagship interim assessment, Measures of Academic Progress® (MAP®). More than 7,400 partners in U.S. schools, school districts, education agencies, and international schools trust us to offer pre-kindergarten through grade 12 assessments that accurately measure student growth and learning needs, professional development that fosters educators' ability to accelerate student learning, and research that supports assessment validity. To better inform instruction and maximize every learner's academic growth, educators currently use NWEA assessments and items with nearly 10 million students.

**Discover the difference that true partnership makes.**

Learn more at [NWEA.org](http://NWEA.org) or call 503-624-1951.

© 2014 Northwest Evaluation Association. All rights reserved. Measures of Academic Progress, MAP, and Partnering to Help All Kids Learn are registered trademarks and Northwest Evaluation Association and NWEA are trademarks of Northwest Evaluation Association.

