Improvement Ideas for Summative Tests

ACT® Aspire®

AS1029

ACT Aspire™ Improvement Ideas

ACT® Aspire® includes simple improvement ideas at the reporting category (skill) level on student and parent reports. These improvement ideas are provided for the lowest performing skill for each subject tested. The skills are always ordered from highest performing to lowest performing based on the percentage of points correct. If the percentages for two or more skills are tied, the skill with the lower number of total points is displayed first.

Keep in mind that the order of skills listed on reports may not always be exemplary of where to focus learning. For example, the skills in which a student performed within the ACT Readiness Range may not always be listed first, and the skills in which a student did not perform within the ACT Readiness Range may not always be listed last. Also, keep in mind the total number of points possible in each skill when interpreting the percentage correct.

There are two levels of improvement idea statements (low and high) for ACT Aspire summative reporting. Low statements are given on the report if the student's lowest skill score is below the ACT Readiness Range for that particular skill. High statements are given on the report if the student's lowest skill score is at or above the ACT Readiness Range for that particular skill. The full library of improvement idea statements is included in tables 1–5.

Table 1. Improvement idea statements for ACT Aspire English

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
Production of Writing	3	In your writing, work on focusing and developing your topic, organizing your ideas so they are easy to follow, and expressing your ideas in a clear way.	Practice writing for a variety of purposes. Work on developing topics effectively, organizing ideas logically, and expressing ideas in a clear and consistent way.
	4	In your writing, work on focusing and developing your topic, organizing your ideas so they are easy to follow, and expressing your ideas in a clear way.	Practice writing for a variety of purposes. Work on developing topics effectively, organizing ideas logically, and expressing ideas in a clear and consistent way.
	5	In your writing, work on focusing and developing your topic, organizing your ideas so they are easy to follow, and expressing your ideas in a clear way.	Practice writing for a variety of purposes. Work on developing topics effectively, organizing ideas logically, and expressing ideas in a clear and consistent way.
	6	In your writing, work on developing your topic effectively, organizing your ideas logically, and expressing your ideas in a clear and consistent way.	Practice writing for a variety of purposes. Continue working on organizing ideas in logical, cohesive ways and on expressing ideas in a precise, concise, and stylistically consistent manner.

Table 1. Improvement idea statements for ACT Aspire English (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	7	In your writing, work on developing your topic effectively, organizing your ideas logically, and expressing your ideas in a clear and consistent way.	Practice writing for a variety of purposes. Continue working on organizing ideas in logical, cohesive ways and on expressing ideas in a precise, concise, and stylistically consistent manner.
	8	In your writing, work on developing your topic effectively, organizing ideas in a logical, cohesive way, and expressing ideas in a precise, concise, and stylistically consistent manner.	Practice writing for a variety of purposes. Continue working on developing topics effectively, on organizing ideas in logical, cohesive ways, and on expressing ideas in a stylistically consistent manner.
	9	In your writing, work on developing your topic effectively, organizing ideas in a logical, cohesive way, and expressing ideas in a precise, concise, and stylistically consistent manner.	Practice writing for a variety of purposes. Continue working on developing topics effectively, organizing ideas in logical, cohesive ways, and expressing ideas in a stylistically consistent manner.
	10	In your writing, work on developing your topic effectively, organizing ideas in a logical, cohesive way, and expressing ideas in a precise, concise, and stylistically consistent manner.	Practice writing for a variety of purposes. Continue working on developing topics effectively, organizing ideas in logical, cohesive ways, and expressing ideas in a stylistically consistent manner.
Knowledge of Language	3	NA	NA
	4	In your writing, work on choosing the best words and phrases in order to express your ideas clearly and on recognizing when to use formal or informal language.	In your writing, work on choosing words and phrases that are clear and precise and on maintaining consistency in style and tone.
	5	In your writing, work on choosing the best words and phrases in order to express your ideas clearly and on recognizing when to use formal or informal language.	In your writing, work on choosing words and phrases that are clear and precise and on maintaining consistency in style and tone.
	6	In your writing, work on choosing words and phrases that are clear and precise and on maintaining consistency in style and tone.	In your writing, work on choosing language that is clear and precise, especially avoiding unnecessary wordiness and redundancy. Also focus on maintaining consistency in style and tone.
	7	In your writing, work on choosing language that is clear and precise, especially avoiding unnecessary wordiness and redundancy. Also focus on maintaining consistency in style and tone.	In your writing, continue working on choosing language that is precise and concise. Be sure to maintain consistency in style and tone.
	8	In your writing, work on choosing language that is precise and concise while maintaining consistency in style and tone.	In your writing, experiment with how word choices affect meaning and how language functions differently in different contexts.
	9	In your writing, work on choosing language that is precise and concise while maintaining consistency in style and tone.	In your writing, experiment with how word choices affect meaning and how language functions differently in different contexts.
	10	In your writing, work on choosing language that is precise and concise while maintaining consistency in style and tone.	In your writing, experiment with how word choices affect meaning and how language functions differently in different contexts.

Table 1. Improvement idea statements for ACT Aspire English (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
Conventions of Standard English	3	Work on using nouns, verbs, adjectives, adverbs, pronouns, capitalization, commas, ending punctuation, quotation marks, and prepositions correctly. Be sure to combine sentence parts correctly.	Challenge yourself to write more complex sentences, avoiding errors such as run-ons. Continue working on using nouns, verbs, adjectives, adverbs, pronouns, punctuation, and prepositions correctly.
	4	Work on using nouns, verbs, adjectives, adverbs, pronouns, capitalization, commas, ending punctuation, dialogue, and prepositions correctly. Avoid errors such as run-ons when combining sentence parts.	Challenge yourself to write more complex sentences, avoiding errors such as unneeded tense shifts. Continue working on using nouns, verbs, adjectives, adverbs, pronouns, punctuation, and prepositions correctly.
	5	Work on using nouns, verbs, adjectives, adverbs, pronouns, commas, ending punctuation, and prepositions correctly. Avoid sentence structure errors such as inappropriate shifts in tense.	Challenge yourself to write more complex sentences, avoiding errors such as inappropriate shifts in tense and pronoun number. Work on punctuating essential/nonessential parts of sentences correctly.
	6	Work on using parts of speech and punctuation correctly and on identifying essential/nonessential elements. Avoid sentence structure errors, such as inappropriate shifts in tense and pronoun number.	Challenge yourself to write more complex sentences, avoiding errors such as misplaced modifiers. Work on using parts of speech and punctuation (including punctuating essential elements) correctly.
	7	Work on using parts of speech and punctuation (including punctuating essential/nonessential elements) correctly. Avoid sentence structure errors, such as misplaced modifiers and inappropriate shifts in verb mood/ voice.	Challenge yourself to write increasingly complex sentences, avoiding errors in sentence construction. Work on using parts of speech and punctuation (including colons, semicolons, and dashes) correctly.
	8	Work on using parts of speech and punctuation (including colons, semicolons, and dashes) correctly. Avoid errors in sentence construction.	Challenge yourself to write increasingly complex sentences, avoiding all errors in sentence construction and using parts of speech and punctuation correctly.
	9	Work on using parts of speech and punctuation (including colons, semicolons, and dashes) correctly. Avoid errors in sentence construction.	Challenge yourself to write complex sentences, avoiding all errors in sentence construction and using parts of speech and punctuation correctly.
	10	Work on using parts of speech and punctuation (including colons, semicolons, and dashes) correctly. Avoid errors in sentence construction.	Challenge yourself to write complex sentences, avoiding all errors in sentence construction and using parts of speech and punctuation correctly.

Table 2. Improvement idea statements for ACT Aspire Reading

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
Key Ideas and Details	3	Read as many grade-level texts as you can. Work on identifying important details, drawing reasonable conclusions, recognizing main ideas and themes, and understanding how parts of a text relate to one another.	Read as many above grade-level texts as you can. Work on identifying main ideas and themes and on recognizing sequences and relationships (comparative, cause/effect).
	4	Read as many grade-level texts as you can. Work on identifying important details, drawing reasonable conclusions, recognizing main ideas and themes, and understanding how parts of a text relate to one another.	Read as many above grade-level texts as you can. Work on identifying main ideas/themes and on recognizing sequences and relationships (comparative, cause/effect).
	5	Read as many grade-level texts as you can. Work on identifying important details, drawing reasonable conclusions, recognizing main ideas and themes, and understanding how parts of a text relate to one another.	Read as many above grade-level texts as you can, especially informational texts. Work on identifying main ideas/ themes and on recognizing sequences and relationships (comparative, cause/ effect).
	6	Read as many grade-level texts as you can, focusing on informational texts. Work on reading closely, determining main ideas/themes, and identifying sequences and relationships (comparative, cause/effect).	Read as many above grade-level texts as you can, especially informational texts. Work on making reasonable conclusions and on identifying and inferring main ideas, themes, sequences, and relationships.
	7	Read a variety of grade-level texts, focusing on informational texts. Work on reading closely, determining main ideas/themes, and identifying sequences and relationships (comparative, cause/effect).	Read increasingly complex texts from a variety of genres. Work on making and supporting reasonable inferences and on identifying and inferring main ideas, themes, sequences, and relationships.
	8	Read a variety of grade-level texts, focusing on informational texts. Work on reading closely, determining main ideas/themes, and identifying sequences and relationships (comparative, cause/effect).	Read increasingly complex texts from a variety of genres. Work on making and supporting reasonable inferences and on identifying and inferring main ideas, themes, sequences, and relationships.
	9	Read a variety of grade-level texts, focusing on informational texts. Work on reading closely, determining main ideas/themes, and identifying sequences and relationships (comparative, cause/effect).	Read increasingly complex texts from a variety of genres. Work on making and supporting reasonable inferences and on identifying and inferring main ideas, themes, sequences, and relationships.
	10	Read a variety of grade-level texts, focusing on informational texts. Work on reading closely, determining main ideas/themes, and identifying sequences and relationships (comparative, cause/effect).	Read increasingly complex texts from a variety of genres. Work on making and supporting reasonable inferences and on identifying and inferring main ideas, themes, sequences, and relationships.

Table 2. Improvement idea statements for ACT Aspire Reading (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
Craft and Structure	3	As you read, think about the purpose of texts and parts of texts, how texts are organized, how authors use point of view, and how information in texts can help you figure out what words mean.	Read as many above grade-level texts as you can. Think about how texts are structured, how authors use point of view, how context helps determine word meanings, and how authors use words and phrases.
	4	As you read, think about the purpose of texts and parts of texts, how texts are organized, how authors use point of view, and how information in texts can help you figure out what words mean.	Read as many above grade-level texts as you can. Think about how texts are structured, how authors use point of view, how context helps determine word meanings, and how authors use words and phrases.
	5	As you read, think about the purpose of texts and parts of texts, how texts are organized, how authors use point of view, and how information in texts can help you figure out what words mean.	Read as many above grade-level texts as you can. Think about how texts are structured, how authors use point of view, how context helps determine word meanings, and how authors use words and phrases.
	6	As you read, consider the purpose of texts and parts of texts, how texts are structured, how authors use point of view, how context helps determine word meanings, and how authors use words and phrases.	Read as many above grade-level texts as you can, especially informational texts. Analyze how texts are organized, how authors use point of view, and how authors use words and phrases.
	7	As you read, consider the purpose of texts and parts of texts, how texts are structured, how authors use point of view, how context helps determine word meanings, and how authors use words and phrases.	Read as many above grade-level texts as you can, especially informational texts. Analyze how texts are organized, how authors use point of view, and how authors use words and phrases.
	8	As you read, consider the purpose of texts and parts of texts. Also analyze how texts are organized, how authors use point of view, and how authors use words and phrases.	Read increasingly complex texts from a variety of genres. Analyze how parts of texts relate to the whole, how authors use point of view, and how word choices impact meaning and tone.
	9	As you read, consider the purpose of texts and parts of texts. Also analyze how texts are organized, how authors use point of view, and how authors use words and phrases.	Read complex texts from a variety of genres. Analyze how parts of texts relate to the whole and how an author uses point of view and word choice to advance his or her purpose.
	10	As you read, consider the purpose of texts and parts of texts. Also analyze how texts are organized, how authors use point of view, and how authors use words and phrases.	Read complex texts from a variety of genres. Analyze how parts of texts relate to the whole and how an author uses point of view and word choice to advance his or her purpose.
Integration of Knowledge and Ideas	3	As you read, think about how authors present and support their ideas. Also read different texts on the same topic and think about how these texts are similar and different.	Read as many above grade-level texts as you can. Think about how authors use reasons and evidence to support their ideas. Also, look for connections between and among related texts.
	4	As you read, think about how authors present and support their ideas. Also read different texts on the same topic and think about how these texts are similar and different.	Read as many above grade-level texts as you can. Think about how authors use reasons and evidence to support their ideas. Also, look for connections between and among related texts.

Table 2. Improvement idea statements for ACT Aspire Reading (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	5	As you read, think about how authors present and support their ideas. Also read different texts on the same topic and think about how these texts are similar and different.	Read as many above grade-level texts as you can. Think about how authors use reasons and evidence to support their ideas. Also, look for connections between and among related texts.
	6	As you read, consider how authors present their arguments. Also read multiple texts with similar topics or similar themes and look for connections between and among these texts.	Read as many above grade-level texts as you can, especially informational texts. Think about how authors construct arguments and support claims. Also, look for connections between and among related texts.
	7	As you read, consider how authors present their arguments. Also read multiple texts with similar topics or similar themes and look for connections between and among these texts.	Read as many above grade-level texts as you can, focusing on informational texts. Think about how authors construct arguments and support claims. Also, look for connections between and among related texts.
	8	As you read, analyze how authors present their arguments. Also read multiple texts with similar topics or similar themes and analyze connections between and among these texts.	Read increasingly complex texts from a variety of genres. Analyze how authors present arguments, focusing on strengths and weaknesses. Also, look for connections between and among related texts.
	9	As you read, analyze how authors present their arguments. Also read multiple texts with similar topics or similar themes and analyze connections between and among these texts.	Read complex texts from a variety of genres. Analyze how authors present arguments, focusing on strengths and weaknesses. Also, look for connections between and among related texts.
	10	As you read, analyze how authors present their arguments. Also read multiple texts with similar topics or similar themes and analyze connections between and among these texts.	Read complex texts from a variety of genres. Analyze how authors present arguments, focusing on strengths and weaknesses. Also, look for connections between and among related texts.

Table 3. Improvement idea statements for ACT Aspire Science

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
Interpretation of Data	3	Generate and interpret a greater number and variety of data presentations (tables, line plots, pictographs, bar graphs). Begin working with more advanced data presentations (dense tables, line graphs).	Generate and interpret more advanced data presentations (dense tables, line graphs). Think about who will use a data presentation to decide how to present data in the most accurate and useful way.
	4	Generate and interpret a greater number and variety of data presentations (tables, line plots, pictographs, bar graphs). Begin working with more advanced data presentations (dense tables, line graphs).	Generate and interpret more advanced data presentations (dense tables, line graphs). Think about who will use a data presentation to decide how to present data in the most accurate and useful way.
	5	Generate and interpret a greater number and variety of data presentations (tables, line plots, pictographs, bar graphs). Begin working with more advanced data presentations (dense tables, line graphs).	Generate and interpret more advanced data presentations (dense tables, line graphs). Think about who will use a data presentation to decide how to present data in the most accurate and useful way.
	6	Generate and interpret a greater number and variety of data presentations (scientific tables, line graphs, diagrams). Use trends to extend data in data presentations (interpolation, extrapolation).	Carefully consider the intended audience to determine the most accurate and useful way to present data. Use mathematical concepts (interpolation, extrapolation, slope) to interpret and extend from graphs.
	7	Generate and interpret a greater number and variety of data presentations (scientific tables, line graphs, diagrams). Use trends to extend data in data presentations (interpolation, extrapolation).	Carefully consider the intended audience to determine the most accurate and useful way to present data. Use mathematical concepts (interpolation, extrapolation, slope) to interpret and extend from graphs.
	8	Generate and interpret a greater number and variety of data presentations (scientific tables, line graphs, diagrams). Use trends to extend data in data presentations (interpolation, extrapolation).	Carefully consider the intended audience to determine the most accurate and useful way to present data. Use mathematical concepts (interpolation, extrapolation, slope) to interpret and extend from graphs.
	9	Generate and interpret a greater number and variety of data presentations (scientific tables, line graphs, diagrams). Use trends to extend data in data presentations (interpolation, extrapolation).	Carefully consider the intended audience to determine the most accurate and useful way to present data. Use mathematical concepts (interpolation, extrapolation, slope) to interpret and extend from graphs.
	10	Generate and interpret a greater number and variety of data presentations (scientific tables, line graphs, diagrams). Use trends to extend data in data presentations (interpolation, extrapolation).	Carefully consider the intended audience to determine the most accurate and useful way to present data. Use mathematical concepts (interpolation, extrapolation, slope) to interpret and extend from graphs.
Scientific Investigation	3	Generate questions that can be investigated and then design and perform simple investigations that will validly test the questions. Start to examine more complex scientific investigations.	Generate questions that can be investigated and then design and perform scientific investigations to validly test the questions. Evaluate the methods and procedures used in others' investigations.
	4	Generate questions that can be investigated and then design and perform simple investigations that will validly test the questions. Start to examine more complex scientific investigations.	Generate questions that can be investigated and then design and perform scientific investigations to validly test the questions. Evaluate the methods and procedures used in others' investigations.

Table 3. Improvement idea statements for ACT Aspire Science (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	5	Generate questions that can be investigated and then design and perform simple investigations that will validly test the questions. Start to examine more complex scientific investigations.	Generate questions that can be investigated and then design and perform scientific investigations to validly test the questions. Evaluate the methods and procedures used in others' investigations.
	6	Generate questions that can be investigated and then design and perform controlled experiments to validly test the questions. Examine complex scientific experiments involving multiple variables.	Generate hypotheses and then design and perform controlled experiments involving multiple variables to validly test the hypotheses. Evaluate experiments for possible sources of measurement error.
	7	Generate questions that can be investigated and then design and perform controlled experiments to validly test the questions. Examine complex scientific experiments involving multiple variables.	Generate hypotheses and then design and perform controlled experiments involving multiple variables to validly test the hypotheses. Evaluate experiments for possible sources of measurement error.
	8	Generate questions that can be investigated and then design and perform controlled experiments to validly test the questions. Examine complex scientific experiments involving multiple variables.	Generate hypotheses and then design and perform controlled experiments involving multiple variables to validly test the hypotheses. Evaluate experiments for possible sources of measurement error.
	9	Generate questions that can be investigated and then design and perform controlled experiments to validly test the questions. Examine complex scientific experiments involving multiple variables.	Generate hypotheses and then design and perform controlled experiments involving multiple variables to validly test the hypotheses. Evaluate experiments for possible sources of measurement error.
	10	Generate questions that can be investigated and then design and perform controlled experiments to validly test the questions. Examine complex scientific experiments involving multiple variables.	Generate hypotheses and then design and perform controlled experiments involving multiple variables to validly test the hypotheses. Evaluate experiments for possible sources of measurement error.
Evaluation of Models, Inferences, and Experimental Results	3	Examine the results of simple investigations. Draw conclusions (claims and predictions) from those results. Consider ways to improve those investigations.	Examine the results of scientific investigations. Draw conclusions (claims and predictions) from those results and modify your investigations based on your conclusions.
	4	Examine the results of simple investigations. Draw conclusions (claims and predictions) from those results. Consider ways to improve those investigations.	Examine the results of scientific investigations. Draw conclusions (claims and predictions) from those results and modify your investigations based on your conclusions.
	5	Examine the results of simple investigations. Draw conclusions (claims and predictions) from those results. Consider ways to improve those investigations.	Examine the results of scientific investigations. Draw conclusions (claims and predictions) from those results and modify your investigations based on your conclusions.
	6	Compare and evaluate the results of scientific experiments and compare and evaluate competing scientific explanations. Examine ways to improve on scientific experiments and explanations.	Evaluate competing scientific explanations by generating predictions based on each explanation. Explain why the results of scientific experiments support or do not support a scientific explanation.

Table 3. Improvement idea statements for ACT Aspire Science (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	7	Compare and evaluate the results of scientific experiments and compare and evaluate competing scientific explanations. Examine ways to improve on scientific experiments and explanations.	Evaluate competing scientific explanations by generating predictions based on each explanation. Explain why the results of scientific experiments support or do not support a scientific explanation.
	8	Compare and evaluate the results of scientific experiments and compare and evaluate competing scientific explanations. Examine ways to improve on scientific experiments and explanations.	Evaluate competing scientific explanations by generating predictions based on each explanation. Explain why the results of scientific experiments support or do not support a scientific explanation.
	9	Compare and evaluate the results of scientific experiments and compare and evaluate competing scientific explanations. Examine ways to improve on scientific experiments and explanations.	Evaluate competing scientific explanations by generating predictions based on each explanation. Explain why the results of scientific experiments support or do not support a scientific explanation.
	10	Compare and evaluate the results of scientific experiments and compare and evaluate competing scientific explanations. Examine ways to improve on scientific experiments and explanations.	Evaluate competing scientific explanations by generating predictions based on each explanation. Explain why the results of scientific experiments support or do not support a scientific explanation.

Table 4. Improvement idea statements for ACT Aspire Mathematics

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
Grade Level Progress	3	Complete your homework when assigned. Ask questions in class.	Explain one of your assignments to a parent, grandparent, brother, or sister.
	4	Complete your homework when assigned. Ask questions in class.	Explain one of your assignments to a parent, grandparent, brother, or sister.
	5	Complete your homework when assigned. Meet with a friend and quiz each other on the concepts learned each day.	Help a friend in your class who is struggling with a math assignment.
	6	Complete your homework when assigned. Meet with a friend and quiz each other on the concepts learned each day.	Help a friend in your class who is struggling with a math assignment.
	7	Complete your homework when assigned. Meet with a friend and quiz each other on the concepts learned each day.	Help a friend in your class who is struggling with a math assignment.
	8	Ask questions when you don't understand the lesson. Start a group with classmates to study for quizzes and tests.	Try completing the "challenge" questions in your textbook for your current math work.
	9	Ask questions when you don't understand the lesson. Start a group with classmates to study for quizzes and tests.	Try completing the "challenge" questions in your textbook for your current math work.
	10	Ask questions when you don't understand the lesson. Start a group with classmates to study for quizzes and tests.	Try completing the "challenge" questions in your textbook for your current math work.
Integrating Essential Skills	3	Continue to strengthen your skills by using the mathematics you learned in previous grades.	Before you solve a math problem, predict how the solution will go and what method(s) will work.
	4	Continue to strengthen your skills by using the mathematics you learned in previous grades.	Before you solve a math problem, predict how the solution will go and what method(s) will work.
	5	Continue to strengthen your skills by using the mathematics you learned in previous grades.	Before you solve a math problem, predict how the solution will go and what method(s) will work.
	6	Continue to strengthen your skills by applying and integrating the mathematics you learned in previous grades.	Before you solve a math problem, predict how the solution will go and what method(s) will work.
	7	Continue to strengthen your skills by applying and integrating the mathematics you learned in previous grades.	Everybody makes mistakes. When you make one, think about what tipped you off to there being something wrong, and think about whether you could have noticed it sooner.
	8	Continue to strengthen your skills by applying and integrating the mathematics you learned in previous grades.	Everybody makes mistakes. When you make one, think about what tipped you off to there being something wrong, and think about whether you could have noticed it sooner.

Table 4. Improvement idea statements for ACT Aspire Mathematics (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	9	Continue to strengthen your skills by applying and integrating the mathematics you learned in previous grades.	Everybody makes mistakes. When you make one, think about what tipped you off to there being something wrong, and think about whether you could have noticed it sooner.
	10	Continue to strengthen your skills by applying and integrating the mathematics you learned in previous grades.	Everybody makes mistakes. When you make one, think about what tipped you off to there being something wrong, and think about whether you could have noticed it sooner.
Justification and Explanation	3	Give reasons for your steps when solving a mathematical problem. Why do you do those things? Explain how to solve a problem from your homework to a classmate.	On one or two of your homework problems each day, put in steps to better show what you were thinking, and add justifications for each step.
	4	Give reasons for your steps when solving a mathematical problem. Why do you do those things? Explain how to solve a problem from your homework to a classmate.	On one or two of your homework problems each day, put in steps to better show what you were thinking, and add justifications for each step.
	5	Work on identifying reasons for mathematical steps. Explain how to solve a problem from your homework to someone at home. Understand how someone else solves the same problem and discuss the differences.	On one or two of your homework problems each day, put in steps to better show what you were thinking, and add justifications for each step.
	6	Work on identifying reasons for mathematical steps. Explain how to solve a problem from your homework to someone at home. Understand how someone else solves the same problem and discuss the differences.	Explain how to solve a problem on a calculator and why it makes sense to do all the steps.
	7	Work on identifying reasons for mathematical steps. Can you identify errors in someone's math homework?	Explain how to solve a problem on a calculator and why it makes sense to do all the steps.
	8	Work on identifying reasons for mathematical steps. Can you show why the area of a triangle is always half of the base times the height?	Before you solve a math problem, predict how the solution will go and what method(s) will work.
	9	Understand mathematical derivations and justification in your textbooks. Know the concepts behind math terms and why procedures work.	Read a proof you found in a college mathematics textbook or on the internet.
	10	Understand not just what to do but why that works. Create reasoning based on different cases, being sure to cover all of the cases and then summarizing the result.	Read a proof you found in a college mathematics textbook or on the internet.
Modeling	3	Work on creating picture representations of numerical statements and use the pictures to solve problems.	Create a 3-dimensional math problem by using everyday objects to represent numbers.
	4	Work on creating picture representations of numerical statements and use the pictures to solve problems.	Create a 3-dimensional math problem by using everyday objects to represent numbers.

Table 4. Improvement idea statements for ACT Aspire Mathematics (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	5	Work on creating picture representations of numerical statements and use the pictures to solve problems.	Find a real-world situation and create a model to describe and predict information.
	6	Ask someone to describe a mathematical situation and write a numerical statement describing it. That's creating a model.	Find a real-world situation and create a model to describe and predict information.
	7	Ask someone to describe a mathematical situation and write a numerical statement describing it. That's creating a model.	Find a real-world situation and create a model to describe and predict information.
	8	Work on interpreting models. Identify the numbers and variables in the model and describe what they represent.	Find some real-world situations and create models to describe and predict information.
	9	Work on interpreting models. Identify the numbers and variables in the model and describe what they represent. Explain places where the model does not exactly reflect reality.	Find some real-world situations and create models to describe and predict information.
	10	Work on interpreting models. Identify the numbers and variables in the model and describe what they represent. Compare different models and explain trade-offs between accuracy and simplicity.	Find some real-world situations and create models to describe and predict information.
Number and Operations—Fractions	3	Work on understanding and comparing unit fractions and understanding equivalent fractions. Why is 1/4 more than 1/6 ?	Make a drawing that has pictures that represent 5 different fractions. Show on the drawing how you know which picture represents the greatest fraction and which represents the least fraction.
	4	Work on comparing, adding, and subtracting fractions. Can you convert a decimal number to a fraction and a fraction to a decimal number?	Make a drawing that shows how multiplying fractions is related to addition. Use your drawing to explain this process to a friend.
	5	Work on adding and subtracting fractions with unlike denominators. Can you explain the connection between fractional representations and division?	Draw a picture that represents how to multiply and divide fractions. Explain your picture to a friend.
	6-10	NA	NA
Number and Operations in Base 10	3	Add and subtract numbers up to 1,000, and know when it's easier to do the calculation in your head and when it's easier to do it a different way. Do you know all of the answers when multiplying 1-digit numbers?	Play a game with your classmates to see who can list all the multiples of 10 up to 100 the fastest.
	4	Work on understanding place value for multidigit whole numbers. Find where a store receipt uses adding, subtracting, multiplying, and dividing.	Show someone at home how you perform multidigit arithmetic with real-world data.
	5	Work on explaining the patterns when multiplying by a power of 10.	Explain to your teacher your strategy for multiplying and dividing decimal numbers.
	6–10	NA	NA

Table 4. Improvement idea statements for ACT Aspire Mathematics (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
The Number System	3–5	NA	NA
	6	Work on dividing fractions by other fractions. Can you explain what "absolute value" means in more than one way?	Find real-world examples of positive and negative numbers. What does "absolute zero" mean in these examples?
	7	Work on adding, subtracting, multiplying, and dividing with negative numbers. Can you find the fractional equivalent for a repeating decimal?	Have a friend choose a fraction. Show him or her how to convert that fraction to decimal form.
	8	Work on recognizing the decimal expansion of numbers. Can you find decimal approximations for irrational numbers?	In what kinds of problems do you work with irrational numbers? Make a list and share it with someone in your class.
	9, 10	NA	NA
Number and Quantity	3–8	NA	NA
	9	Work on applying properties of exponents and rewriting radical expressions in terms of rational exponents. Do the properties of exponents make sense to you? If you make sense of them, they will be easier to use.	Explain how to solve a problem in a physics or chemistry textbook by using the units on the quantities as a guide.
	10	Work on applying properties of exponents and rewriting radical expressions in terms of rational exponents. What does it mean that a number is the cube root of 3? Why should pi to the zero power equal 1?	Explain how to solve a problem in a physics or chemistry textbook by using the units on the quantities as a guide.
Operations and Algebraic Thinking	3	Work on multiplying and dividing within 100 and writing expressions using multiplication and division.	Find 5 real-world situations where you need to multiply or divide. Explain how you use multiplication and division in these situations.
	4	Work on finding factors and multiples of whole numbers. Given a rule for the next term, can you make a sequence of numbers that follows the rule?	Make up a rule for a pattern and ask a friend to generate 5 values in the pattern. Ask the friend to then make up a rule for a pattern and let you generate 5 values.
	5	Work on graphing ordered pairs of corresponding terms from two different patterns and use that to compare the patterns. Can you interpret the numerical expressions to predict something about values without actually finding values?	Record the calculations needed for 2 homework problems each day during 1 week and explain why you used those calculations.
	6–10	NA	NA
Expressions and Equations	3–5	NA	NA
	6	Work on solving one-variable equations and inequalities and evaluate numerical expressions with whole-number exponents. Can you write an equation that represents the cost of an item in terms of the quantity purchased?	Write an equation that represents one real-world quantity in terms of another. What does that relationship mean in terms of the real-world situation?
	7	Work on creating equivalent expressions using properties of operations. Create a list of what's the same and what's different when solving arithmetically versus solving algebraically.	Pick an expression from your math homework and create an expression that is equivalent. Describe to your teacher how you created the second expression.

Table 4. Improvement idea statements for ACT Aspire Mathematics (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	8	Work on understanding how to work with integer exponents and scientific notation. Can you make connections between proportional relationships, lines, and linear equations?	Find some real-world data expressed in scientific notation. What new information can you produce using operations on that data?
	9, 10	NA	NA
Ratios and Proportional Relationships	3–5	NA	NA
	6	Work on connecting rate relationships to multiplication, division, and equivalent fractions. For a product at the store, determine the unit rate.	Find 3 real-world problems you can use ratio reasoning to solve. Explain to someone at home how you would solve those problems.
	7	Work on representing and analyzing proportional relationships. Given a percent off in an advertisement, can you calculate the discount and the sale price?	Find 3 real-world situations that use percents. Draw a picture that represents each percent in the situation.
	8–10	NA	NA
Algebra	3–8	NA	NA
	9	Work on performing operations on polynomials, solving linear equations and inequalities, and solving quadratic equations. Do algebraic expressions have meaning for you? Interpret expressions as they apply to the real world.	Practice a variety of methods to solve quadratic equations (e.g., completing the square, factoring, and applying the quadratic formula).
	10	Work on performing operations on polynomials, solving linear equations and inequalities, and solving quadratic equations. Can you identify when a system of equations has zero, one, or infinitely many solutions?	Practice a variety of methods to solve quadratic equations (e.g., completing the square, factoring, and applying the quadratic formula).
Functions	3–7	NA	NA
	8	Work on understanding that linear functions have a constant rate of change. Given a word problem, can you model the situation with a linear function?	Try writing a word problem based on a real-world situation that is modeled by a linear function. What are the values that represent the slope and *y*-intercept in your situation?
	9	Work on interpreting and modeling with functions. Do you know the basic characteristics of exponential, quadratic, square-root, and absolute value functions?	Practice working with piecewise-defined functions; describe what the graph means in terms of a real-world situation.
	10	Work on interpreting and modeling with functions. Do you know the basic characteristics of exponential, quadratic, square-root, and absolute value functions?	Practice working with piecewise-defined functions; describe what the graph means in terms of a real-world situation.
Geometry	3	Work on understanding sets of shapes and their characteristics and dividing shapes into parts with equal areas.	Consider the properties of different types of quadrilaterals; what things are the same? What things are different?
	4	Work on classifying shapes by properties of their lines and angles and identifying lines of symmetry.	Consider basic shapes that form real-world objects (e.g., a book can be modeled by a rectangle). How many lines of symmetry can you find?

Table 4. Improvement idea statements for ACT Aspire Mathematics (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	5	Work on graphing points in the first quadrant and classifying two-dimensional figures into categories that have a hierarchy.	Find real-world data that occurs in ordered pairs and graph that data in the standard coordinate plane. What characteristics of the graph do you observe?
	6	Work on finding area and surface area, understanding the volume formula, and drawing polygons in the coordinate plane.	Draw a variety of polygons in the standard coordinate plane. Explain how you use the coordinates of their vertices to find the area of those polygons.
	7	Work on solving problems involving surface area and volume. Can you describe how circumference and area are related for a circle?	Create a scale drawing of your room and describe the relationship between the actual measurements and the measurements in your drawing.
	8	Work on applying the Pythagorean theorem. Can you express a congruence relationship in terms of reflections, rotations, and translations?	Create a set of directions including at least 4 transformations (rotations, reflections, and translations) that will take a polygon and map it onto itself.
	9	Work on explaining geometric reasoning related to lines and angles. Derive the formula for the volume of a pyramid.	Make a list of at least 6 real-world objects and the 3-dimensional objects that model each of them.
	10	Work on explaining geometric reasoning related to lines and angles. Derive the formula for the volume of a pyramid.	Make a list of at least 6 real-world objects and the 3-dimensional objects that model each of them.
Measurement and Data	3	Work on showing sets of measurements on bar graphs and solving problems about perimeter and area.	Find the perimeter and area of at least 4 rectangular surfaces in your home or neighborhood.
	4	Work on converting measurements from a larger unit to a smaller unit and understanding angle concepts.	Find the length, in feet, of at least 3 objects in your home or neighborhood and convert those measurements to inches.
	5	Work on converting measurements within a given system and relating volume to multiplication and addition.	In terms of some small object (like grapes or marshmallows), determine the volume of at least 3 containers in your home by filling them with those objects.
	6–10	NA	NA
Statistics and Probability	3–5	NA	NA
	6	Work on displaying data in plots on the number line and summarizing data in relation to context.	Find some data represented in a newspaper and summarize it in relation to the context.
	7	Work on comparing populations based on random samples and finding probability using organized lists or drawings.	What kind of conclusions can you make when you choose a random set of people that you can't make when you choose your friends? Why is that?
	8	Work on finding patterns between two quantities as seen in scatterplots and modeling with linear functions.	Find a scatterplot on the internet and create a linear function that models the data. Interpret the slope and intercept in relation to the data.

Table 4. Improvement idea statements for ACT Aspire Mathematics (*continued*)

Reporting category	Grade	Low statement (scored below ACT Readiness Range)	High statement (scored at or above ACT Readiness Range)
	9	Work on comparing distributions and interpreting the differences. Do you understand the difference between finding the probability of repeated events with replacement versus without?	What could you do if you gave a survey but some people didn't answer the question? Would it matter?
	10	Work on comparing distributions and interpreting differences. Do you understand the difference between finding the probability of repeated events with replacement versus without?	What could you do if you gave a survey but some people didn't answer the question? Would it matter?


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