



DATA STREAM

Teacher Manual

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Goals/Objectives

English Language Arts Standard(s)	<p>Students will develop reading comprehension strategies by answering questions about fiction and nonfiction texts, and working with graphic organizers and summaries.</p>
Comprehension Skills	<p>Students will...</p> <ul style="list-style-type: none"> • describe the overall structure (e.g., cause/effect, problem/solution) of events, ideas, concepts, or information in a text or graphic organizer (craft & structure) • refer to details and examples in text, either in passage or graphic organizer form, when drawing inferences from it (drawing inferences) • read texts with accuracy, appropriate rate, and expression to support comprehension (fluency) • read texts independently, with minimal to no assistance (independent reading) • use information gained from a text or graphic organizer to demonstrate understanding of the text (interpreting visual information) • distinguish key ideas from supporting details to answer specific questions (key ideas & details) • recognize whether they understand what they are reading, and if necessary, take steps to repair their comprehension before continuing to read (monitoring comprehension)
Language/Reading Skills	<p>Students will...</p> <ul style="list-style-type: none"> • use the language needed for success in school, including general academic words (which appear frequently in print, but rarely in social conversations), discipline-specific terms, and multiple-meaning words (academic language) • clarify the meaning of unknown words using strategies such as morphemic and contextual analysis (word learning strategies)
Cognitive Skills	<p>Students will...</p> <ul style="list-style-type: none"> • use working memory for sentence comprehension and building text-level representations in long-term memory (memory) • selectively attend to critical information and sustain attention across longer passages and question sets (attention) • develop fluency in extracting and integrating meaning from longer text passages (processing) • recognize and track temporal and causal event sequences in passages of text (sequencing)
Social-Emotional/ Executive Function Skills	<p>Students will...</p> <ul style="list-style-type: none"> • apply cognitive strategies for acquiring, consolidating, and recalling information from fiction and nonfiction texts • develop and practice deductive reasoning capacities • increase confidence with independent reading as a way to learn new information • be motivated to think critically about text

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Exercise Screen

1 Reread

Returns to the original content screen so the student can reread when needed.

2 Help

Provides access to help options:

- How To replays initial instructions.
- Help highlights and names each alternative.

3 Home

Returns the student to their assignments screen.

4 Content

Shows a passage, graphic organizer, or summary that the student must review and interpret.

5 Question

Shows a question about the content presented.

6 Answer Buttons

Shows possible answers to the question.

7 Time

Shows Time Worked / Time Scheduled for the exercise.

8 Points

Shows total points awarded across all of a day's sessions.

- Correct answers: 8 points for questions that count toward progress; 4 points for practice or intervention questions.

9 Level Progress

Displays the current level and percent complete of the level.

10 Current Streak

Shows the current number of consecutive correct answers in the session. Resets to zero after an incorrect answer.

11 Highest Streak

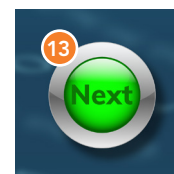
Shows the highest number of consecutive correct answers in this session.

12 Go

Presents content or a question.

13 Next

Continues to the next page or task.



Exercise Overview

Task

In Data Stream, students complete three tasks. First, they read a short fiction or nonfiction passage and answer comprehension questions about it. Then, they select or complete an organizer (either a graphic organizer or a summary of the passage). Finally, they use that organizer to answer additional comprehension questions about the passage.

Content

Data Stream focuses on the use of comprehension strategies. Students practice using organizers to analyze and summarize the information from a fiction or nonfiction passage. As the student works on the exercise, the passages become longer and more difficult and the organizers become more complex, the task shifts from selecting an organizer to completing one, and the associated comprehension questions become more challenging.

	Easy	Difficult
Passages	Grade 3-5 75-200 Words	Grade 6-8 240-480 Words
Organizer Task/ Content	Select/Less Complex	Complete/More Complex
Questions	Literal Reference	Inferential Integrative Metacognitive

Did you know?

Research indicates that reading comprehension depends directly on the strategies used to connect information in a text to what has been read before or learned through past experiences. Reading comprehension strategies are especially necessary for students who are struggling, such as students with reduced oral language skills due to developmental or experiential issues.

Organizational strategies—as well as responses to literal and inferential questions posed during and after reading—allow readers to connect the information from fiction or nonfiction text to their prior knowledge for consolidation. This conversion, sometimes referred to as “reading to learn,” is critical for learning across all subject areas.

Exercise Overview

Progression

In Data Stream, students progress through 7 levels of difficulty that focus on different organizers and related tasks. Within each level, students work with several passages.

Organizer tasks and types	Passages
Select a Circle Diagram	4
Complete a Circle Diagram	4
Complete a Table	6
Complete a Concept Web	6
Complete a Flowchart/Timeline	6
Select a Summary	6
Complete a Summary	6

Within each passage, students work through 3 tasks, in order:

Task 1: Passage	Read a fiction or nonfiction passage and answer questions presented after every few pages.
Task 2: Organizer	Select or complete a graphic organizer or summary
Task 3: Questions	Answer comprehension questions, making use of the organizer.

To complete a passage, the student must correctly answer 80% of the questions that involve the organizer (Tasks 2 & 3). To advance in the exercise, the student must complete all passages.

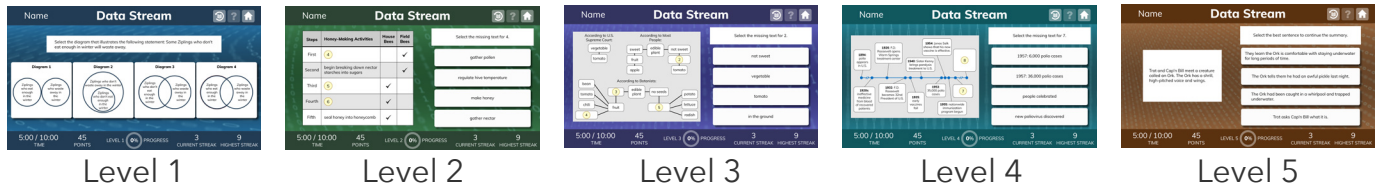
- For Tasks 1 and 2, questions answered incorrectly will be repeated as learning questions up to 2 times. Learning questions do not count toward progress.
- Passages that were not passed will be repeated. Students have 3 attempts to pass; otherwise they will return to those passages at the end of the exercise.

Data Stream adapts to the student's performance and provides targeted interventions if the student is struggling.

Exercise Overview

Motivational Levels

After each 20% of progress through the exercise, students “level up” and the screen changes slightly. These motivational levels are not connected to specific content.



Targeted Practice

This exercise uses built-in, responsive technology to detect when a student is struggling and administer targeted, inline instruction—right when the student needs it—without any external resources or assistance required. This helps reduce frustration as it quickly gets the student back on track, so they can continue making progress.

One type of intervention, the Concept Web intervention, is used when a student is struggling to build a concept web or use a completed one to answer comprehension questions. It walks the student through the relationship between the items in a concept web, and how to use the relationships to identify or infer the missing information.

Here is a concept web that organizes some basic facts about the ten-legged crustaceans known as decapods. Like many concept webs, each box shows one concept. The lines connecting the boxes show links or relationships between the concepts...

Select the missing text for 2.

- starfish
- salmon
- lobsters
- crabs

5:00 / 10:00 TIME 81 POINTS LEVEL 3 50% PROGRESS 3 CURRENT STREAK 9 HIGHEST STREAK

Introduce

Engage

To introduce the exercise to your students, say: Today we are going to focus on reading comprehension. Reading comprehension means that you can understand what is being read or what you are reading. We are going to work on this by reading a short passage. After that, we are going to organize the facts from the passage into a graphic organizer. To build student engagement, display a large graphic organizer. You can use the Data Stream Graphic Organizer Worksheet from [Student & Teacher Resources](#). Consider using a concept web, flowchart, or timeline to display the details/facts. Read the passage aloud and then, say: Now, we will complete the graphic organizer together. Think aloud as you add the details noted from the passage into the graphic organizer until completion.

Demo

1. Say: Today, we're going to practice using comprehension strategies to manage the information we read. Comprehension strategies help us organize information so that we can understand and use it better. First, we'll read a passage and answer a few questions about it. Then, we'll analyze and organize the information into a table, chart, diagram, or summary, and use it to answer more questions. Together, we'll work on an exercise called Data Stream. I'll get us started, and then I'd like for you to try.
2. Project the "Introduction - English or Spanish demo" for Data Stream.
3. Follow along with the demo, which explains how the exercise works.
 - When looking at a graphic organizer, describe the details you see.
 - Explain which answer is the best match and how you ruled out the other options.
 - Choose an answer:
 - Correct answer: a "ding" sound effect plays, the answer is highlighted, and the answer appears in the graphic organizer when applicable.
 - Incorrect answer: a "thunk" sound effect plays and the incorrect answers are dimmed.
4. Demo the keyboard shortcuts:
 - Go button = Space bar
 - Next button = Space bar
 - Possible answers (left to right, top to bottom) = Number keys 1 - 4

Direct students to log in and work individually on the Data Stream Demo for approximately 10 minutes. This time period mimics the timing of the exercise once it's assigned. Debrief with students to ensure they understand the task and objective of the exercise. Ask: [What did you notice?](#) Have students share anything that they have questions about.



Data Stream includes instructional audio for the exercise introduction and instructions. By default, these are presented in English. You can, however, select Spanish instructions for all, some, or individual students on the Manage page in mySciLEARN.

Facilitate and Encourage

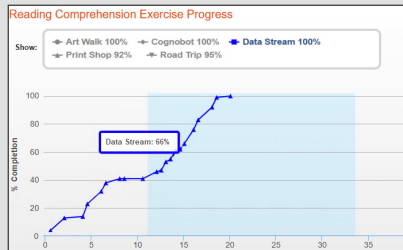
Monitor Student Progress

Review Data Stream reports regularly to monitor student progress. Use the data to determine which students are succeeding and which students might be struggling to make progress.

Where to look...

PROGRESS: Reading Comprehension Exercise Progress - Data Stream

The colored line shows student progress and their percent complete. Each dot indicates a day the student worked on the exercise.



What to look for... what it means

Is the line going up?

The student is completing content accurately and making progress.

Is the line flat across several dots?

The student may be struggling and you need to find out why.

Are there long lapses between dots?

The student may be skipping this exercise.

USAGE: Usage Details - Schedule

Schedule		Minutes/Questions		Start Time		
Days of Use	Date	Art Walk	Cognobot	Data Stream	Print Shop	Road Trip
10	06/18/2021	●	○	●	●	●
9	06/17/2021	●		●		
8	06/15/2021		●	○	●	●
7	06/14/2021	●	○	●	●	●
6	06/10/2021	●		●		●
5	06/09/2021			○	●	●

Schedule

See if the student has met their daily schedule, and check what's planned for the next few days:

- Time completed
- Time not completed
- Exercise Skipped
- Planned for day

Do you see half-filled gray circles?

The student is working on this exercise, but not meeting the scheduled time. Make sure that they have time to complete their daily schedule. If fatigue is an issue, add some breaks to their schedule.

Do you see red circles?

The student is skipping this exercise. Provide support to help them re-engage.

USAGE: Usage Details - Minutes/Questions

Schedule		Minutes/Questions		Start Time		Total Minutes	
Days of Use	Date	Art Walk	Cognobot	Data Stream	Print Shop	Road Trip	
		Min	Ques	Min	Ques	Min	Ques
8	06/30/2021	-	-	-	-	30	202
7	06/29/2021	-	-	15	40	3	10
6	06/28/2021	-	-	0	344	5	5
5	06/25/2021	10	1092	0	253	1	5
4	06/24/2021	-	-	1	61	7	53
3	06/23/2021	1	5	2	7	5	5
2	06/22/2021	3	10	-	-	2	10
1	06/21/2021	-	-	3	33	2	31

Are many days highlighted in red?

The student is not meeting their daily schedule. Check the Schedule tab in this report to investigate further.

Is the student answering fewer questions than usual?

They may be distracted or losing focus. In comparison to their previous activity, a low number of trials to minutes may indicate the student is not applying themselves to the task.

Is the student answering more questions than usual?

They may be rushing. In comparison to their previous activity, a high number of trials to minutes may indicate the student is trying to amass points, or to progress more quickly, but rushing can result in mistakes. Remind them that making progress depends on accuracy, not speed.

Where to look...

PROGRESS: Progress Details - Data Stream Progress

Task	Progress	In progress: passed / total	Not started
Select a Circle Diagram	2/4		
Complete a Circle Diagram			
Complete a Table		0%	0
Complete a Concept Web		0%	0
Complete a Flowchart / Timeline		0%	0
Select a Summary		0%	0
Complete a Summary		0%	0

Progress

For tasks in progress, the report shows the number of passages successfully completed out of the total number for each graphic organizer.

Percent Correct

To make progress, students must answer 80% of the questions associated with a passage correctly. Each graphic organizer is associated with multiple passages.

Questions

The minimum number of questions varies based on the graphic organizer task:

- Select a Circle Diagram: 36
- Complete a Circle Diagram: 24
- Complete a Table: 69
- Complete a Concept Web: 68
- Complete a Flowchart/Timeline: 71
- Select a Summary: 36
- Complete a Summary: 61

What to look for... what it means

Is percent correct near 80%?

The student is close to passing (80%). Encourage them to take their time, think about each question, and use the Reread button. Note that percent correct reflects performance across all the passages in a group, so early difficulties can mask later successes and early successes can mask later difficulties. Check the Error Report for the most recent day's results.

Is percent correct well below 80%?

The student may be struggling with multiple aspects of the graphical organizer. Check the Errors section of this report to determine where the student needs additional support.

Is the number of successfully completed passages increasing?

The student has mastered some content and is making progress.

Is the number of successfully completed passages staying the same?

The student may be struggling with this type of graphic organizer. Remind them to listen to and observe the corrective feedback to better understand why their answer was wrong before moving on to the next question. Otherwise, check the Errors section of this report which can help you determine where the student needs additional support.

PROGRESS: Errors - Data Stream

Content the student is struggling with is indicated in red.

Task	Errors	Errors / Questions
Circle Diagram		
Select or Complete	4%	1 / 28
Use to Answer Questions	23%	9 / 39

Are specific tasks highlighted in red?

Consider providing the student with instruction on the specific graphic organizers with which they are struggling.

See the "Adjust Instruction/Intervene" section in this teacher manual for suggestions on supporting struggling students.



Reading Comprehension Progress Monitoring Chart in [Student & Teacher Resources](#)

Facilitate and Encourage

Adjust Instruction/Intervene

Differentiation Activities

Differentiating instruction requires continually striving to know and to respond to each student's needs in order to maximize learning. Use the data in Data Stream reports to adjust instruction to meet each student's needs and respond to variance among learners. The activities below are suggestions to support students who might be struggling with their progress in Data Stream.



Does the student understand the exercise goal/task?

After initially reviewing the exercise goal/task with the student, if the student is demonstrating difficulty, consider clarifying the instructions, setting a goal based on student area of need, and modeling and practicing self-monitoring to encourage accuracy, confidence, and independence.

- First, start by setting a clear goal:
 - Set a goal in student-friendly language prior to beginning the exercise. The goal should be positively stated, written using clear and concise language, and be observable and measurable.
 - Review the goal with the student and check for understanding.
- Next, introduce and model how the student will monitor their goal:
 - Choose or create a self-monitoring chart for students to track their progress over time. Use the chart to motivate, encourage, and allow the student to practice self-monitoring. Include the goal on the self-monitoring chart.
 - Explain and model the steps needed to complete and interpret the self-monitoring chart.
 - Practice completing and interpreting the self-monitoring chart with the student.
- Then, clarify the expectations by modeling and reviewing the specific steps required to complete the exercise:
 - Review the steps of the activity with the student.
 - Model or explain the steps of the activity.
 - Practice completion of the task with the student.
 - Encourage the student to explain or show you how to complete the task.
 - Monitor independent practice and provide feedback and prompts as needed.

Facilitate and Encourage



Is the student on task and engaged with activity?

When a student is struggling to stay on-task and engaged, consider the strategies below as a starting point to increasing student engagement.

- Adjust the pacing or duration of instruction.
- Provide built-in breaks as well as allow the student to request breaks as needed. Involve the student in determining their preferred and most successful work schedule. Some students prefer longer work periods and longer breaks while others prefer shorter work periods and more frequent breaks. Adjust as needed to increase student momentum, success, and confidence.
- Consider student motivation. Motivation can be intrinsic and extrinsic. How to motivate the student is largely dependent on their learning needs, preferences, and reinforcers. Student observation, reinforcer surveys, rapport building, and parent and student questionnaires can be helpful in determining how to increase student motivation.



Are there words in the task (prompt and response) that the student doesn't know?

- Define and review key vocabulary used in the task.
- Display key vocabulary words and definitions.
- Promote student practice with vocabulary sentence strips, guided notes, response cards, or note cards.



Is the student noticing details in the graphic organizers?

- Provide the student with multiple opportunities to practice reading various types of graphic organizers outside of this activity. Use the Data Stream Graphic Organizer Worksheet in [Student & Teacher Resources](#).
- Model how to interpret information displayed via graphic organizers.
- Think aloud as you look at graphic organizers. Identify key details or facts.
- Have the student practice completing graphic organizers independently, with a peer, and/or with teacher support.

Facilitate and Encourage

Adjust Instruction/Intervene

Student Resources

You may decide to use any or all of these monitoring sheets with your students:



Data Stream Graphic Organizer Worksheet in [Student & Teacher Resources](#)



Reading Comprehension Streaks & Completion Chart in [Student & Teacher Resources](#)

Explain to students that accuracy is the key to moving through the content in Fast ForWord. Because streaks record the number of correct answers in a row, this chart can help students self-monitor for accuracy. After they complete their exercises for each day, have students record their highest streaks and percent complete in each exercise, then challenge them to exceed those numbers tomorrow. Students will need one copy every 5 days.



Reading Comprehension Completion Chart in [Student & Teacher Resources](#)

Students can self-monitor their progress on each exercise in Reading Comprehension by filling in the bar representing their actual completed percentage to provide them with an overall view of how much content they've completed compared to how much they have left to do. Students will need one copy per component.