NYC Subway Literacy

Week 2: Riding the train

Vocabulary:
get on, get off, swipe, go upstairs, go downstairs, pay, sit down, stand up

Phonics:	
Consonants:	Vowels:
d, s, f, n	short u, short e

Numeracy:
Subway strip maps

SWBAT (Students will be able to):
• Name and demonstrate key actions associated with riding a train • Recognize and name train stops on a train that stops near the school • Ask and respond to "How many stops to ____?" using a subway strip map.

Note:
For this week you will need to choose a train which stops near your school.
Go to www.subwaynut.com and find pictures of the 9 closest stations along the train's line as it approaches your school.

Using the templates provided, replace the R train photos and stops with your train's stops (unless your school is also near the R train in Bay Ridge).

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Day 1

- Warm-up

  Review last week's vocabulary on the board. Students ask each other target question from last week: "Do you _____?" "Yes, I do," or "No, I don't."
- Introduce vocabulary

  Introduce the following vocab using TPR (Total Physical Response):
  get on
  get off
  swipe
  go upstairs
  go downstairs
  pay
  sit down
  stand up

  Have students practice together using TPR.

- Introduce story

  Ask students: "Where do you live now?"

  "Do you take the train?" "Which trains do you take?"

  Hand out story:

  Students pre-read story for a few minutes.
  Teacher reads, students listen.

  Teacher reads, students repeat.

  Two students read together.

Going to School

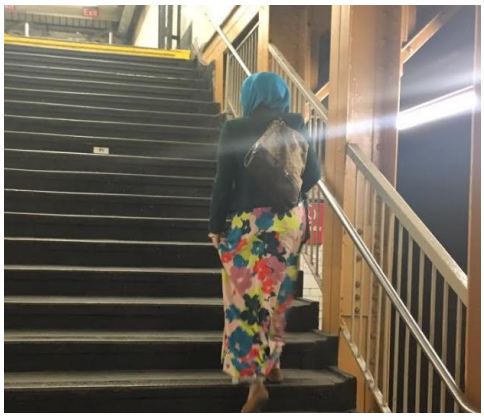
She walks to the train.

She goes downstairs.

She swipes.

She gets on.

She gets off.



She goes upstairs.

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She goes out.

She goes to school.

Day 2

- <u>Warm-up (review vocab)</u>
  Kick off a game of charades to review vocab.
  Model picking one activity, not saying what it is, but acting it out.
  Then, have students take turns acting out the vocab as others call them out.

- <u>Phonics</u>

  1st: Hand out 6 letters and an Elkonin boxes to students. Students independently cut out letters.

  2nd: Review with students each letter sound and letter name. For this week, they are short vowels u & e, and consonants:

u	e	d
s	f	n

  3rd: Teacher calls out CVC words and floats around the room as students place the letters in the correct boxes.

  Watch for things like mixing up the short vowel sounds, or not placing short vowel sounds word-medially.

  CVC words are:

sud	fed	ed
sen	ned	us
sun	fud	en
fun	den	un
fen	nen	es

- <u>Story</u>

  1st: Students pre-read "Going to School" independently.

2nd: Ask students: “Where do you live now?”

“Do you go to _____? How do you go to ____?”
“Do you [mode of transportation]?”

“Do you take the train? What train do you take?”

Teacher reads, students listen.

Teacher reads, students repeat.

3rd: Teacher asks students basic comprehension questions about the story.

4th: Phonics:

Choose one sound (l, t, s, i, u, b) that you think students could use the most practice identifying within the story. Write this letter on the board and review its letter name and letter sound.

1st: Hand out colored pencils to students. Model tracing the letter on the board with a different color marker.

2nd. Students work independently to find and trace the letter within the text.

3rd: Ask students: how many [letter] in the story?

If possible, project your story with all instances of the letter colored. Practice reading those words together, focusing on that sound.

4th: Two students read together. Teacher floats and listens to students read.

- <u>Speaking activity</u>
  This is a preview of tomorrow’s activity.

  Ask students: “Do you take the train? What train do you take?”
  “Today we are going to talk about the _____train.”

  Introduce pictures for the 9 closest train stops to your school.
  Line them up from 1-9, right to left on the board.

  Play flyswatter with the stops on the board.

u	i	s
t	l	b

cut----------

u	i	s
t	l	b

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36TH STREET
© Jeremiah Cox/subwaynut.com

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© Jeremiah Cox/subwaynut.com
Prospect Av
Exit

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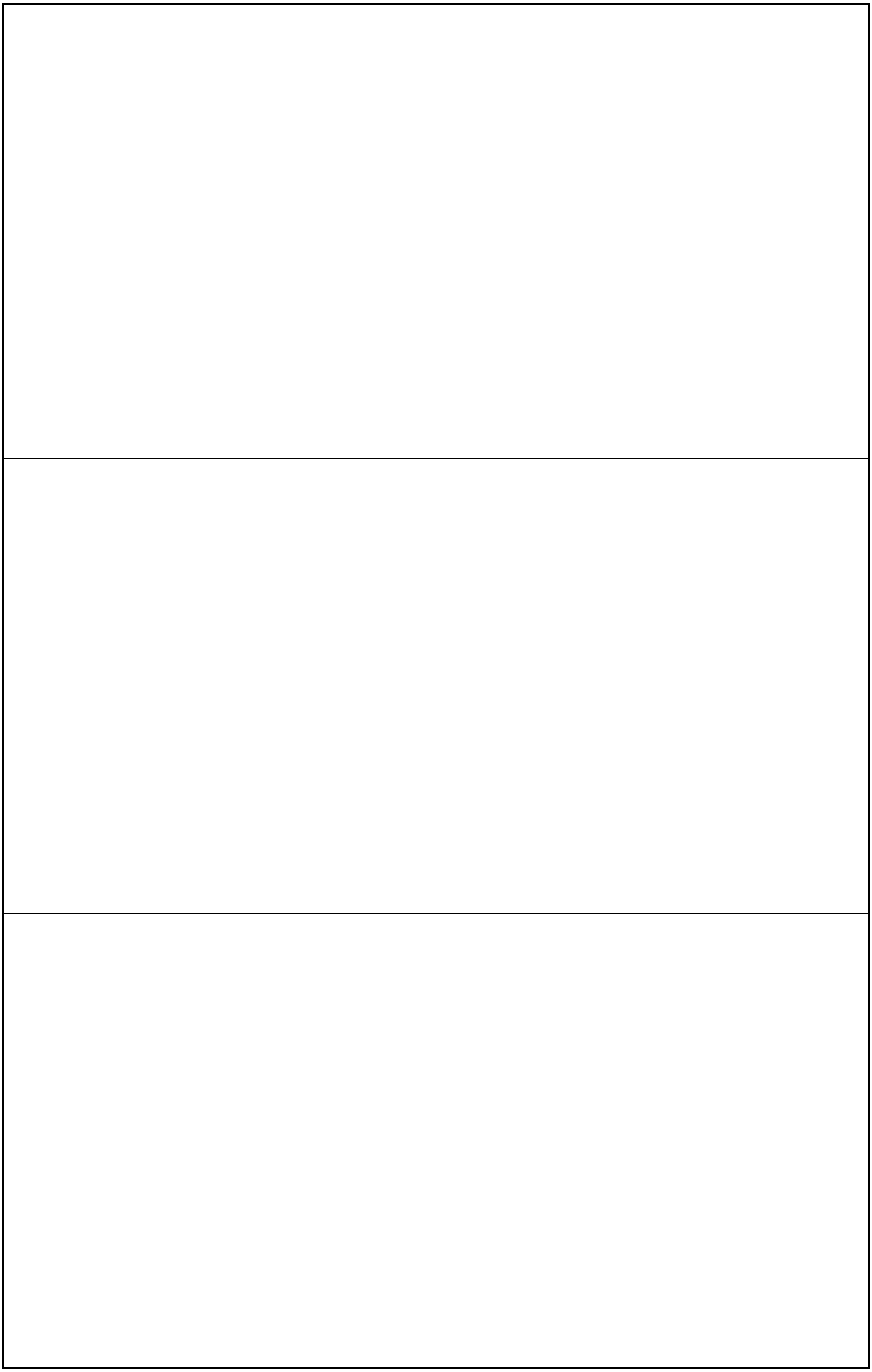

(Elkonin boxes)

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Day 3

- Warm-up: Vocab review

Model a game of Simon Says with the vocab from this unit. If the "Simon Says" part of the game is not coming across, you can just use "Show me" and forget the trick of "No! Simon didn't say…"

Have other students be the teacher and say "Simon Says" or "Show me."

- Story Review

Teacher reads,students listen.

Teacher reads, students repeat.

Two students read together.

Act it out:

Have a student read the story out loud as you (the teacher) acts it out in front of the class.

Then, students take turns in pairs: one student reads the story while the other acts it out. Then they switch.

- Subway strip maps

This activity involves a single train that stops near your school. Go to subwaynut.com to find pictures of stations that are along that train's route, or you can use the R train pictures that are provided here from 59th Street to Atlantic Ave in Brooklyn.

In order to introduce this numeracy concept to students, this activity follows The Levels of Knowing Math. For more information on these concepts, refer to the information sheet at the end of the document.

Intuitive:
Teach the names of the stops using pictures

Ask students: "Where do you live now?"

"Do you take the train?" "Which trains do you take?"

Choose a train that is commonly taken by students and/or has a stop near the school. Go to subwaynut.com and print off the 9 stops which are closest to your school.

Find a picture for each stop. Teach students the names of these stops using the pictures.

Concrete:

Demonstrate cutting out and assembling the picture representation of the stops, 1-9, right to left.
Students complete independently.

When students are finished, ask question: How many stops to ____?
Model counting as you do on a number line, from the start point to the end point.

Pictorial:

Demonstrate copying stop names onto the line map.

Students complete independently.

Abstract:
Demonstrate looking at the map of NYC and identifying where the stops go, and then copying the names into the boxes.

Students complete independently.

Then, demonstrate completing the activity with the subway strip map.

Application:

Students complete comprehension questions using the strip maps.

Communication:
Introduce question: "How many stops to _____?"

Project the subway strip map for a train near your school. Have students ask and answer how many stops to various stations.

Adapted from Kristin Klas, 2013.

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Students cut out a set of 1-9 and place on the line map.

1. 59th Street	4. 36th Street	7. 9th Street
2. 53rd Street	5. 25th Street	8. Union Street
3. 45th Street	6. Prospect Ave	9. Atlantic Ave

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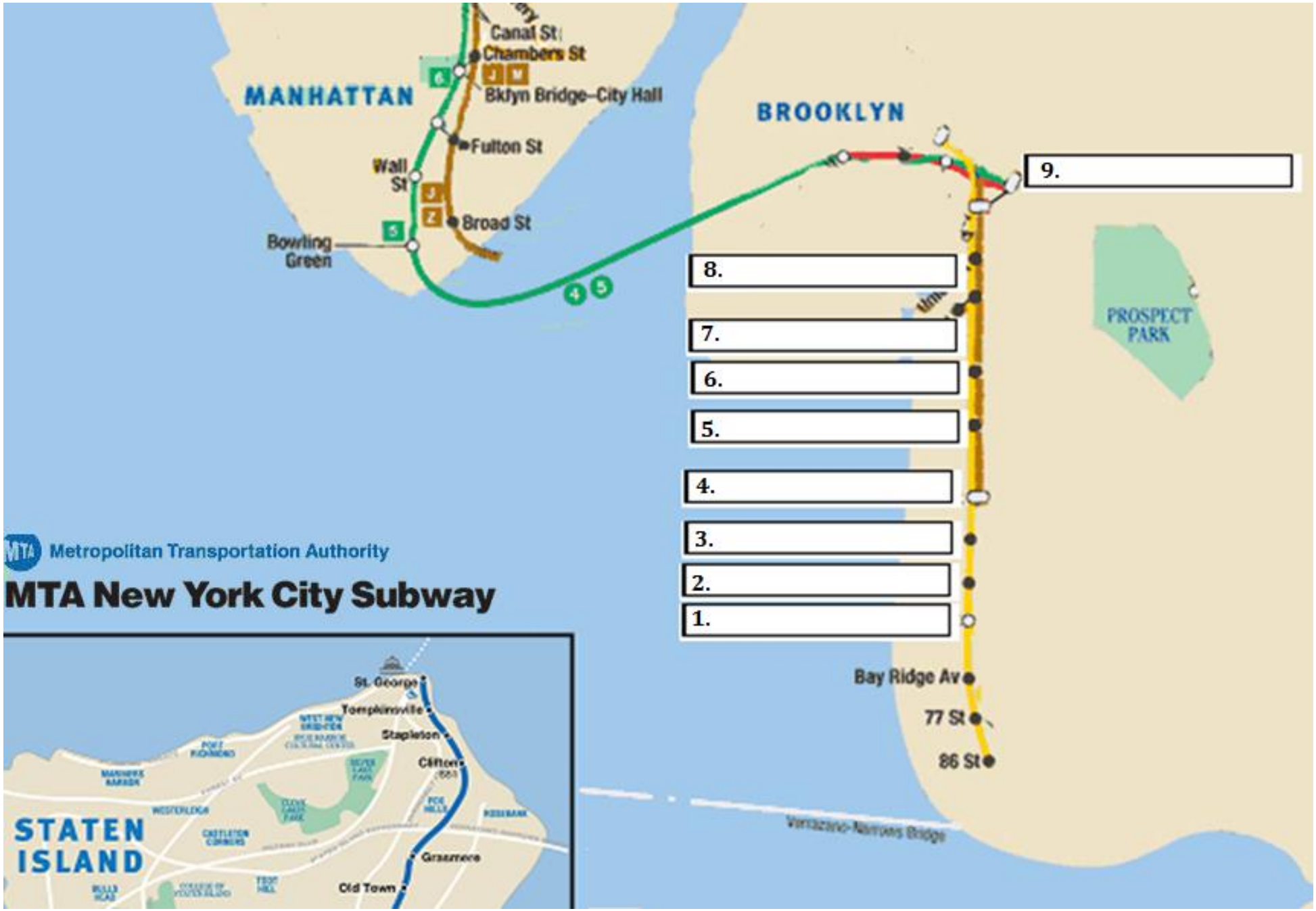
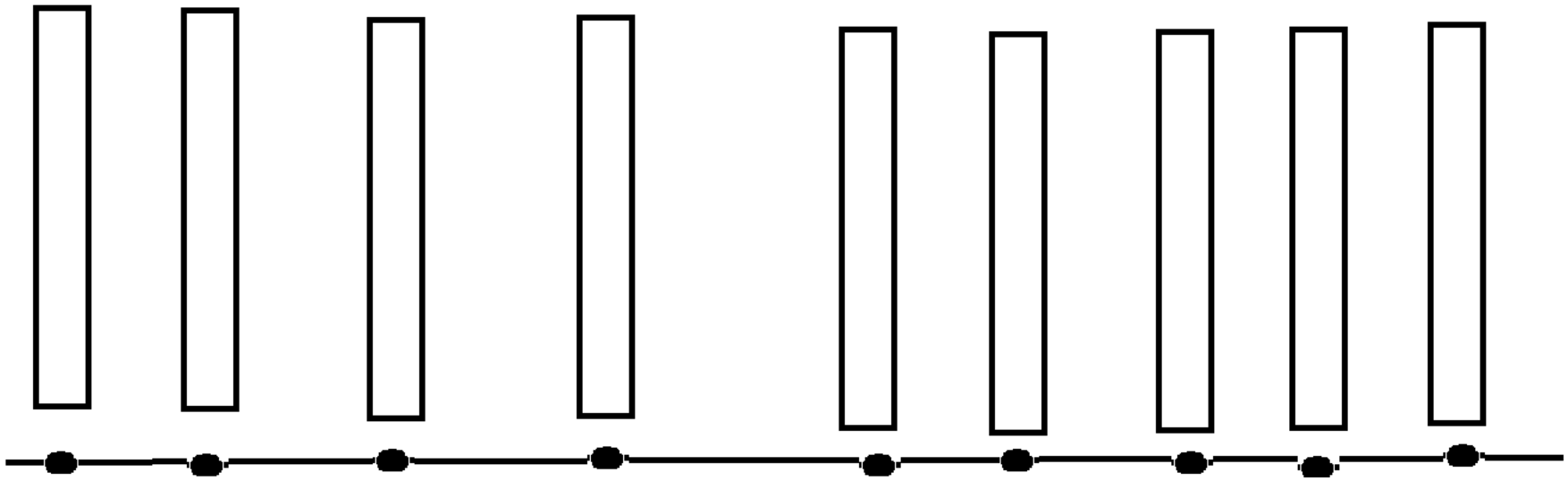

MANHATTAN
BROOKLYN
Canal St
Chambers St
Bklyn Bridge–City Hall
Fulton St
Wall St
Broad St
Bowling Green
9.
8.
7.
6.
5.
4.
3.
2.
1.
PROSPECT PARK
Bay Ridge Av
77 St
86 St
Verrazano-Narrows Bridge
Metropolitan Transportation Authority
MTA New York City Subway
STATEN ISLAND
St. George
Tompkinsville
Stapleton
Clifton
Grasmere
Old Town

Write the stop name.



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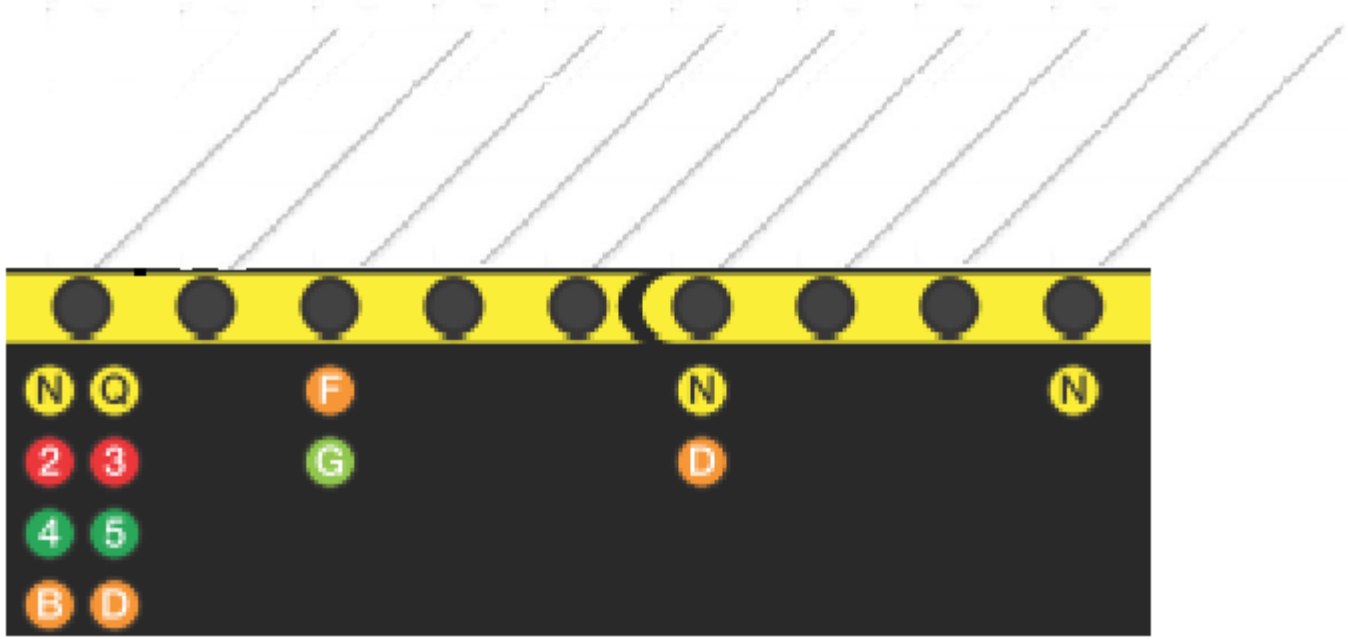
Write the stop name.



1. 59th Street	4. 36th Street	7. 9th Street
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3. 45th Street	6. Prospect Ave	9. Atlantic Ave

Adapted from Kristin Klas, 2013.

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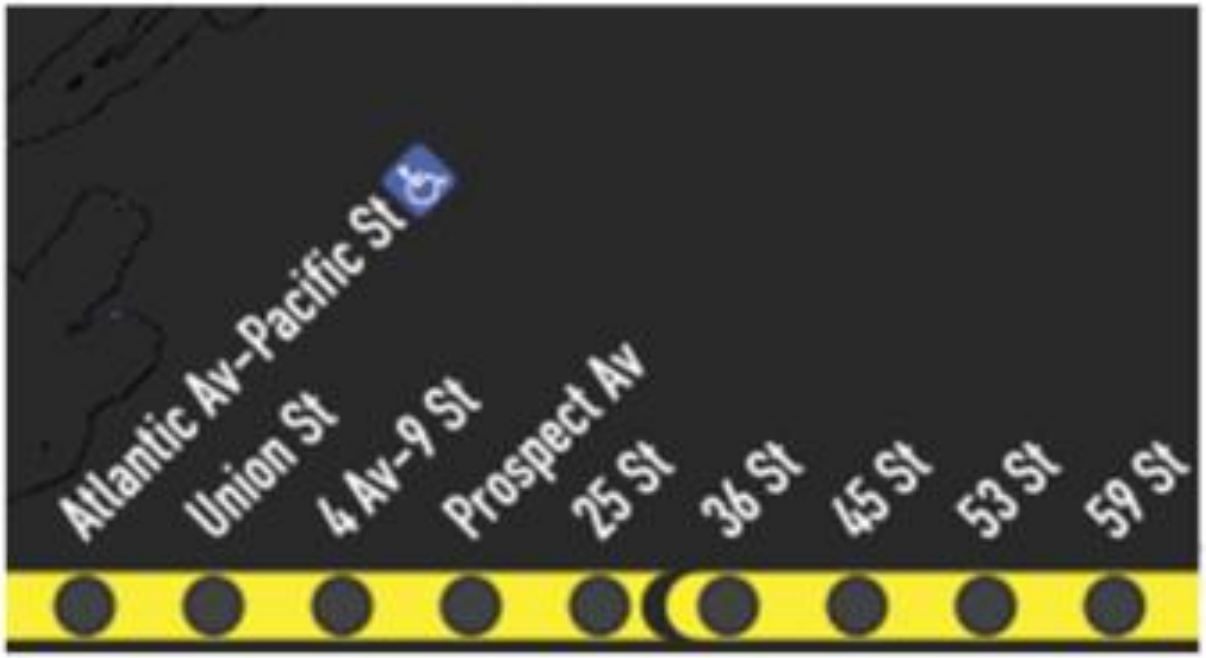
Name: _____



1. How many stops to 9th St? _____
2. How many stops to 45th St? _____
3. How many stops to Union St? _____
4. How many stops to 25th St? _____
5. How many stops to Atlantic Ave? _____
6. How many stops to 36th St? _____

Adapted from Kristin Klas, 2013.

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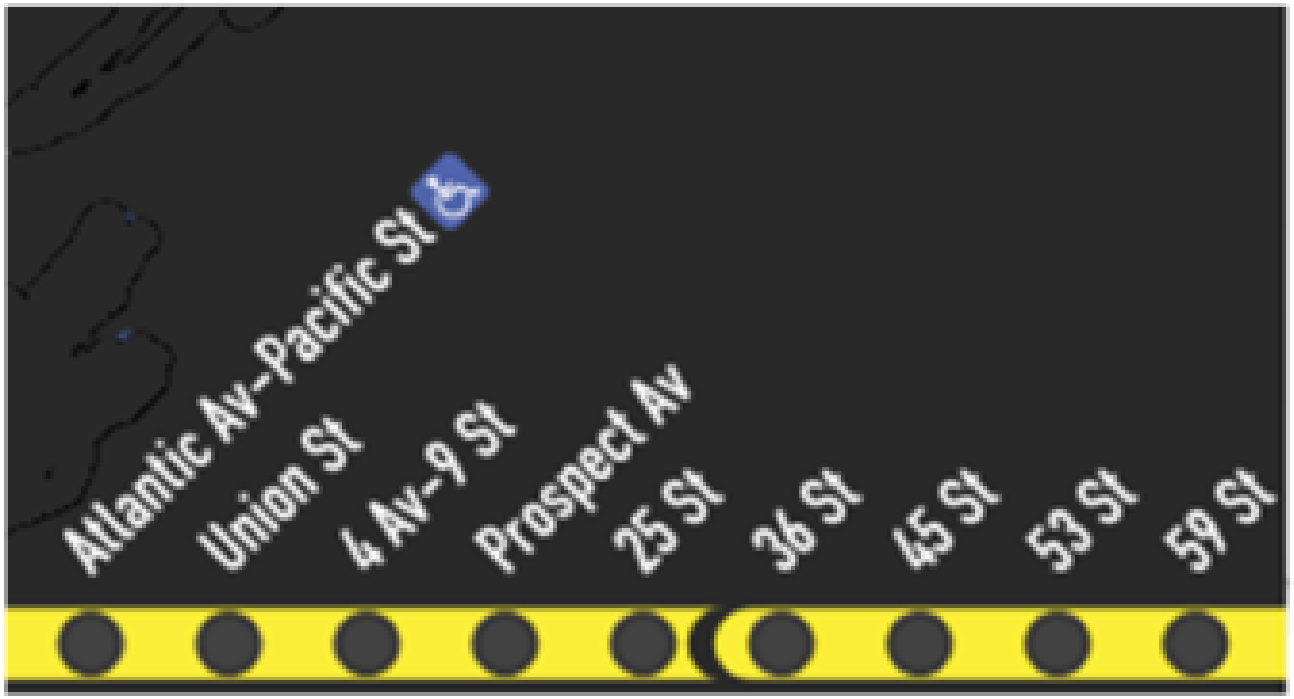

7. How many stops from **53rd St** to **9th St**? _____

8. How many stops to **45th St** to **Prospect Ave**? _____

9. How many stops to **Union St** to **Atlantic Ave**? _____

10. How many stops to **25th St** to **Atlantic Ave**? _____

11. How many stops to **53rd St** to **Prospect Ave**? _____

12. How many stops to **25th St** to **Union St**? _____

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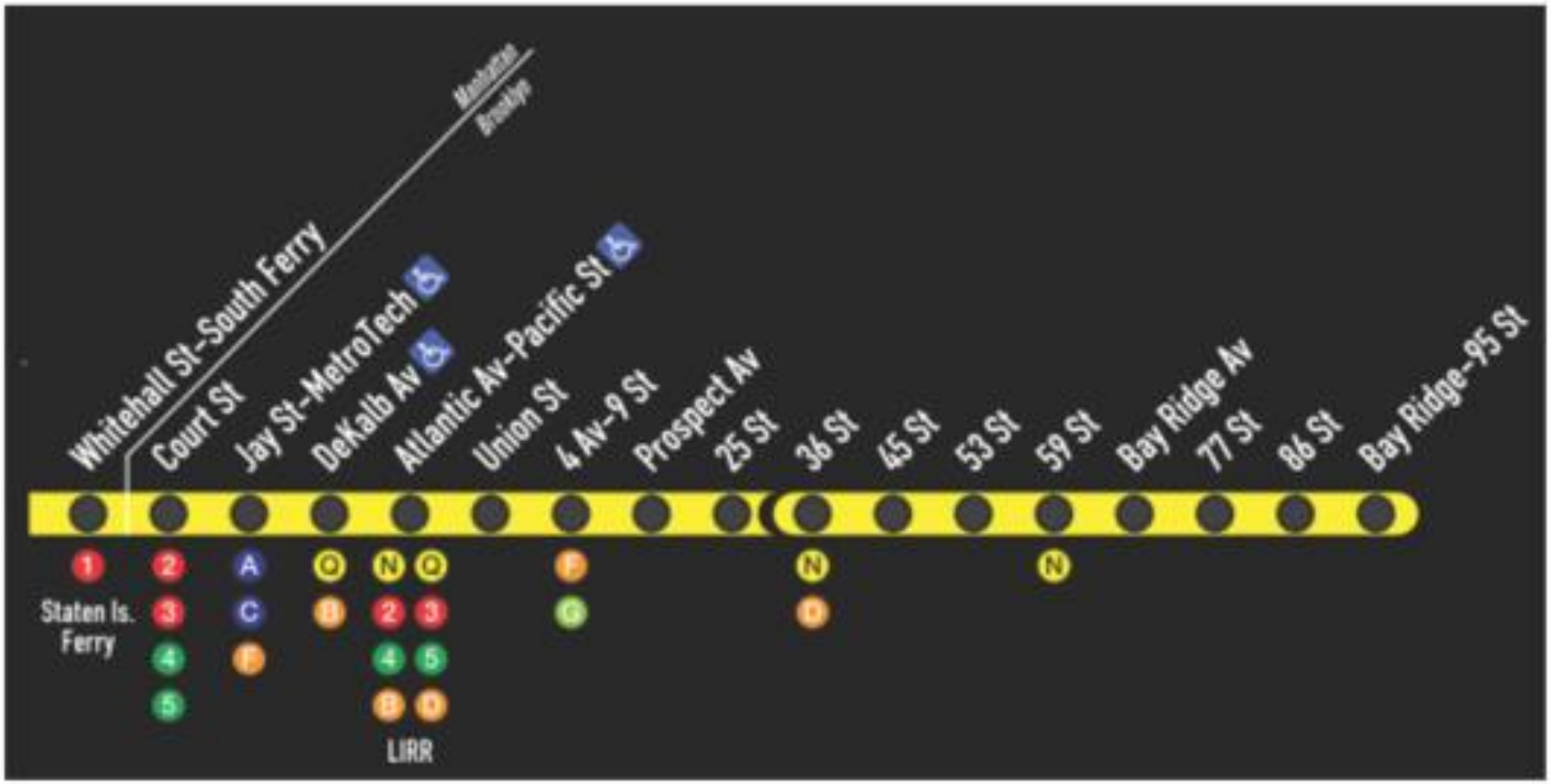

13. How many stops from **59th St** to **Prospect Ave**? _____

14. How many stops from **Union St** to **Dekalb Ave**? _____

15. How many stops from **36th St** to **Jay St**? _____

16. How many stops from **Bay Ridge** to **53rd St**? _____

17. How many stops from **DeKalb Ave** to **Court St**? _____

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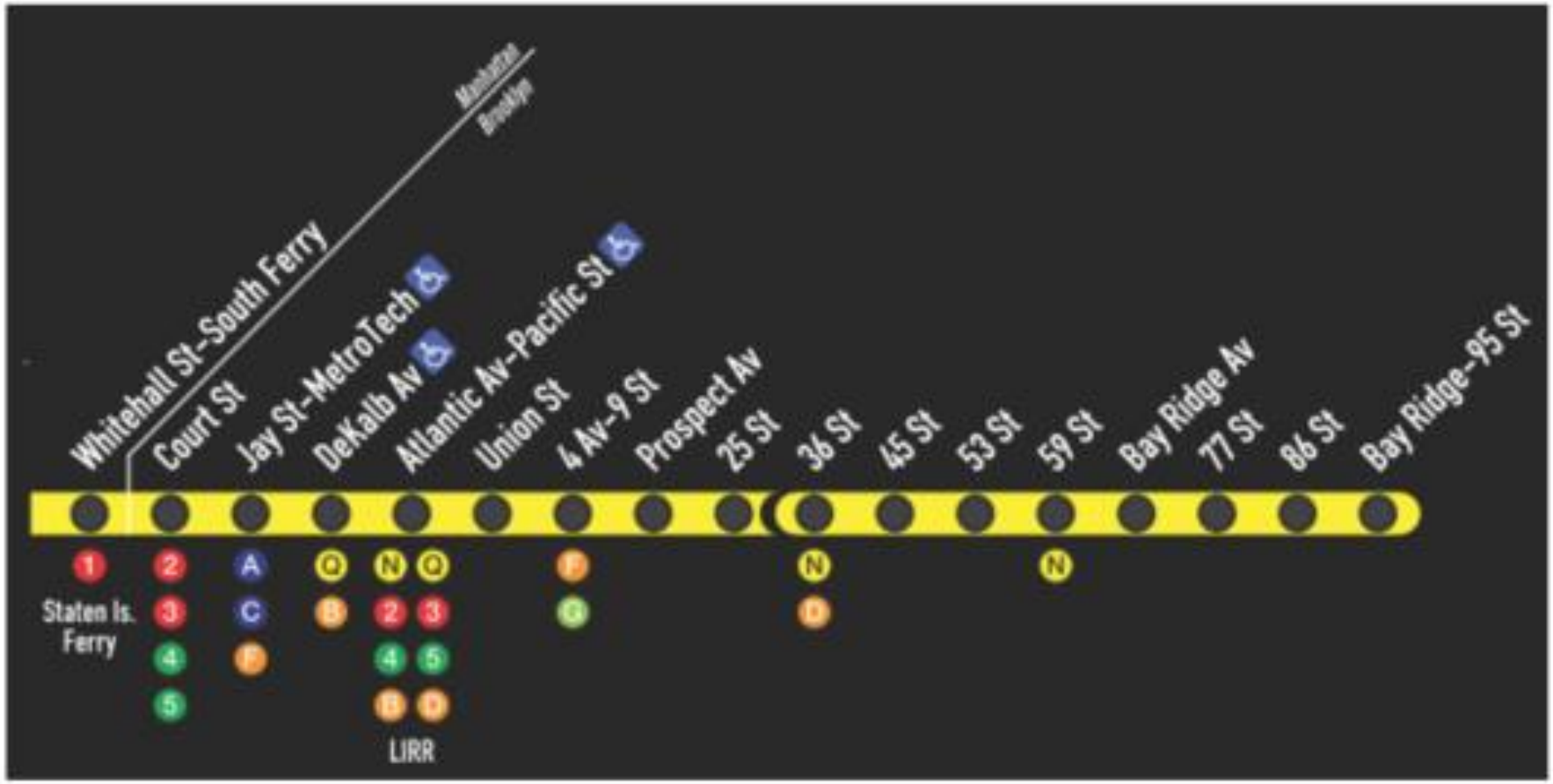

18. How many stops from **59th St** to **Staten Island Ferry**? _____

19. How many stops from **59th St** to **Manhattan**? _____

20. How many stops from **Court St** to **Prospect Ave**? _____

21. How many stops from **77th St** to **86th St**? _____

22. How many stops from **Union St** to **Manhattan**? _____

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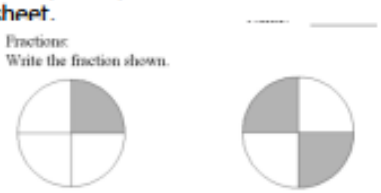
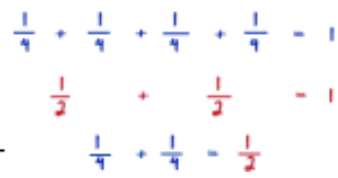
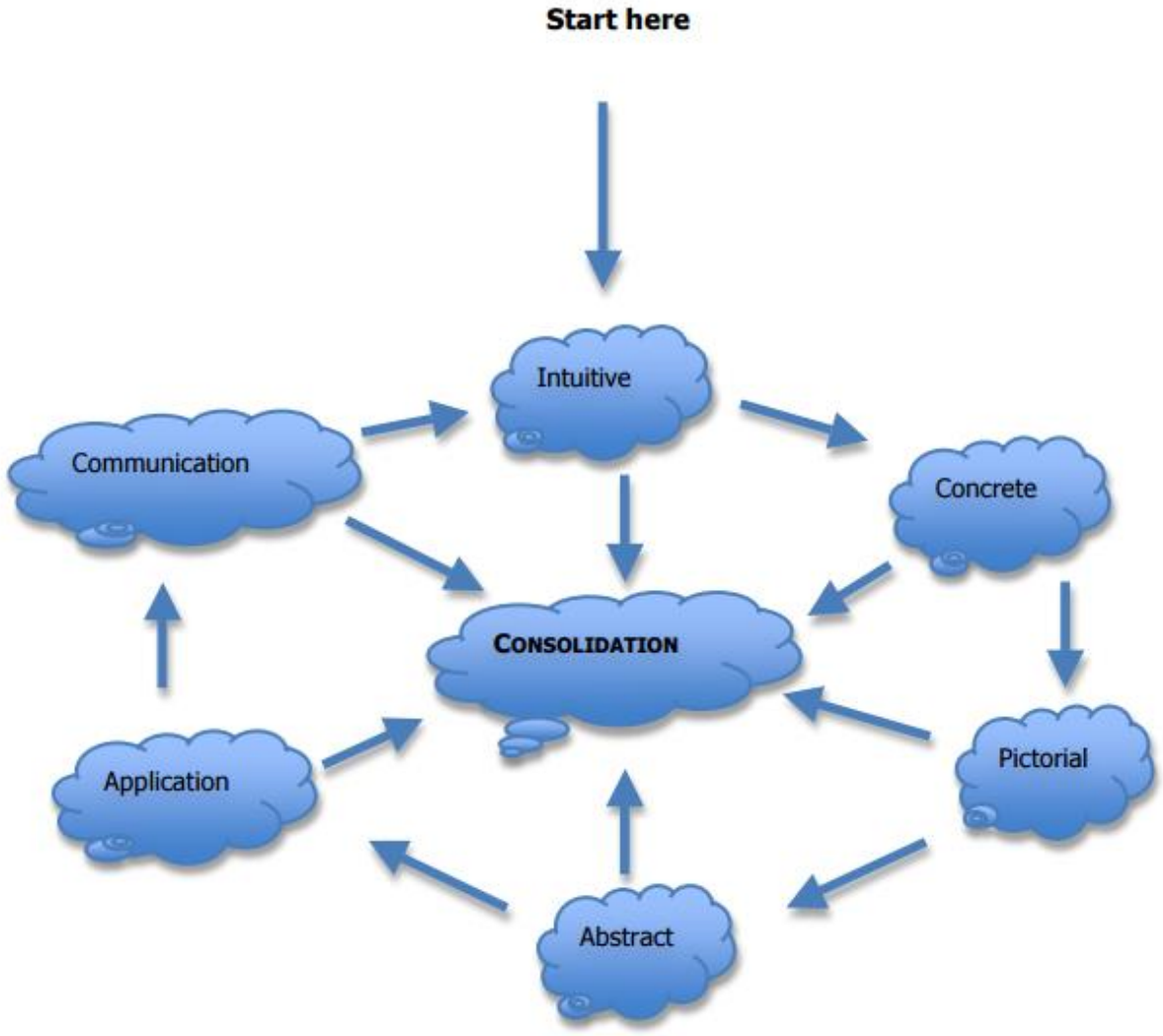
Levels of Learning Mathematics

The term "level" refers to the order that information presented mathematically is processed and learned. Mahesh C. Sharma, in "Learning Problems in Mathematics: Diagnostic and Remedial Perspectives" states that "almost all mathematics teaching activities, in most classrooms, take place at the abstract level. That is where most textbooks are; that is where most of the tests and examinations are." For students who have not mastered particular math content, he proposes the following order or "Levels of Math" as effective for teaching mathematics: intuitive, concrete/experiential, pictorial/representational, abstract, applications, and communication. The chart below explains each level and gives an example of what that level would look like in the classroom.

Levels of Learning	Explanation	Example
Intuitive	At the intuitive level, new material is connected to already existing knowledge. (The teacher checks that the connection is correct.) Introduce each new fact or concept as an extension of something the student already knows.	When a student is given three-dimensional circles cut into fractional pieces, he/she intuitively begin to arrange them into complete circles, thus seeing the wedges as part of a whole.
Concrete/ Experiential	Manipulitives are used to introduce, practice and re-enforce rules, concepts, and ideas. Present every new fact or concept through a concrete model. Encourage students to continue exploring through asking other questions.	Using the concrete model (in this case the wedges) helps the student learn the fractional names. As the student names the pieces, the instructors asks questions such as, "How many pieces are needed to complete the circle? Yes, four, so one out of these four is one fourth of the circle. As students continue to explore they may see that two of the quarters equal half the circle.
Pictorial/ Representational	Picture, diagram, image is used to solve a problem or prove a theorem. Sketch or illustrate a model of the new math fact. Pictorial models are those pictures often provided in textbook worksheets.	When the student has experienced how some pieces actually fit into the whole, present the relationship in a pictorial model, such as a worksheet. 
Abstract	Student is able to process symbols and formulae. Show students the new fact in symbolic (numerical) form. 	After the student has the concrete and pictorial models to relate to, he can understand that 1/4 + 1/4 is not 2/8. Until this concept has been developed, the written fraction is meaningless to the student.

Applications	Student is able to apply a previously learned concept to another topic. Ask student to apply the concept to a real-life situation. The student can now approach fractions with an understanding that each fraction is a particular part of a whole. The instructor can now introduce word problems without illustrations because students have images in their heads.	A student who is asked to give a real-life example or situation might respond with 1/4 cup of flour + 1/4 cup of flour equals 1/2 cup of flour.
Communication	The student is able to convey knowledge to another student reflecting an embedded understanding and the highest level of learning. The student's success in this task reflects an embedded understanding and the highest level of learning.	Ask students to convey their knowledge to other students, i.e., students must translate their understanding into their own words to express what they know.



Sharma wrote, "The mastery of a given mathematical concept passes from the intuitive level of understanding to the level where the student can explain how he has arrived at a particular result and can explain the intricacies and the concept. In many of the regular classroom teaching situation, the teach…may begin at the abstract form of the concept. As a result the student may face difficulty in learning the concept or procedure being taught. Even if he has understood the procedure for solving that problem he may soon forget it. Later when the teacher begin a new concept he may assume, incorrectly, that the mastery in the previous concept is still present and therefore may begin the new concept at a higher level, i.e., the abstract level, creating difficulty for the student. This cycle continues and eventually the student begins to lose the teacher's explanations. The student begins to have difficulty in learning mathematics, which then results in the failure and that develops a fear of mathematics."

This hierarchy of learning can in turn offer a structure for the teacher to follow. If our goal is for students to learn well and do well on test, instructors should do the following when planning instruction in mathematics:

- Introduce concepts at the intuitive level, and lead students through all the levels to the communication level.
- Make sure that the student understands the linguistic, conceptual, and procedural components of the concept.
- Over-teach the concept, i.e., repeatedly use it in one form or another.
- Take he student to a higher level than is required on test (the abstract), i.e., take the student at least to the application level.

Adapted from:

Massachusetts Adult Basic Education Curriculum Framework, Massachusetts Department of Education, Adult and Community Learning Services, October 2005.

Mahesh C. Sharma, Handout entitled, "Learning Problems in Mathematics: Diagnostic and Remedial Perspectives."

Retrieved May 2017 from:

https://abspd.appstate.edu/sites/abspd.appstate.edu/files/DL22MathLevelsofLearning.pdf