# NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

# Volume II

Tryout Survey Instruments
for
Small Scale Usability Study for Grade 4 Writing
Computer-Based Assessment

OMB# 1850-0803 (Generic Clearance for Cognitive, Pilot and Field Test Studies)

**Student Grade 4 Usability Evaluation of Writing Computer-Based Assessment** 



*The amount of time estimated to complete these forms is 75 minutes.* 

January 24, 2011 (revised February 15, 2011)

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	Part I —	Welcome	and Backgro	ound Inform	nation
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## Part I – Welcome Script and Background Information

#### **Grade 4 WCBA Prototype Usability Study Script**

Text written in *italics* is suggested content with which the Facilitator should be thoroughly familiar in advance. The Facilitator should project a warm and reassuring manner toward the students to develop a friendly rapport and as such should use conversational language throughout.

Introduction:
Hello, my name is and I work for Fulcrum IT, which is conducting a study for the National Center of Education Statistics (NCES) of the US Department of Education. This is from (observer affiliation.) It's nice to meet you and thank you for helping us with our computers today.
Today you are going to be looking at different computer programs. This is part of a study to see which type of program works best for students in your grade if they were to take a writing test on laptop computers. One of the programs you will see is being used for writing tests by the National Assessment of Education Progress, also called NAEP for short, with 8th- graders and 12th-graders. We want to see how we might use it or change it for 4th-graders like you.
But you are not here to take a test today. You are helping us to try out the program. We'll be looking to see how well you can find your way and operate the program, as well as what you think about how it looks or anything you like or don't like. We won't be telling anyone how you did or what you thought, but we will use your opinions and results without your name, along with the ideas and answers of other students, to make changes and improve the system for 4th-graders all across the country.
Do you have any questions so far?
Ok, I'm going to be the one talking to you and observing you, and is also going to be observing closely and writing notes. We will start with me asking you a few questions, and then you will look at some pictures on paper before going on the computer. Soon you will be able to type on the laptop computer and then answer some other questions for us. Again, we are not testing you, we will be watching you test the program!
If at any time you decide you do not want to continue, that is your choice and you may stop and go back to class.
Okay, let's begin.

Part I — Welcome and Background	Information
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Participant #	
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Ref #	Facilitator Questions	Observer Note	s	
	Part I — Background Information			
101	Name of Fulcrum Facilitator			
102	Name/Affiliation of Observer			
103	Date			
104	Student ID's number			
105	Student's Gender	☐ Male ☐ Fer	nale	
106	Name of School			
107	School District			
108	School Location	☐ Metro	☐ Suburb	□ Rural
109	Special circumstances that may have affected the			
	interview			

Participant #
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## Part II – Student Oral Survey on Keyboarding and Computer Use

Facilitator Questions	Observer Notes		
Part II — Student Oral Survey			
Do you like computers?	□ Yes □ No		
Do you have a computer at home that you can use?	□ Yes □ No		
How often do you use it?	☐ Once a month ☐ Every other week ☐ Every week ☐ A couple of times a week		
	□ Every day □ Other		
Have you ever used a laptop computer?	□ Yes □ No		
Do you use a computer at school?	□ Yes □ No		
If so, how often?	☐ Once a month ☐ Every other week ☐ Every week ☐ A couple of times a week		
	□ Every day □ Other		
What do you like to do on computers?	☐ Play games ☐ Watch videos ☐ Go on the Internet ☐ Do homework		
	□ Other		
Have you had any typing or keyboarding lessons?	□ Yes □ No		
Have you written a story, essay, or letter on a computer?	□ Yes □ No		
If so, how many times (or how often)?	□ 1 time □ 2 or more times		
	$\square$ Once a month $\square$ Every other week $\square$ Every week $\square$ A couple of times a week		
	□ Every day □ Other		
	Part II — Student Oral Survey  Do you like computers?  Do you have a computer at home that you can use?  How often do you use it?  Have you ever used a laptop computer?  Do you use a computer at school?  If so, how often?  What do you like to do on computers?  Have you had any typing or keyboarding lessons?  Have you written a story, essay, or letter on a computer?		

Part II —	Student Oral	Survey
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Participant #
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Ref #	Facilitator Questions	Observer Notes		
211	If you used a computer for writing, have you used any of these tools? If so, how often do you use them when	Spell Check	□ A lot of times □ Sometimes □ Never	
	you write on a computer?	Cut/copy/or paste □ A lot of times □ Sometimes □ Never		
		Backspace or delete $\square$ A lot of times $\square$ Sometimes $\square$ Never		
		Bold/italics/underline	$\square$ A lot of times $\square$ Sometimes $\square$ Never	
		Indent □ A lot of times □ Sometimes □ Never		
		Undo or redo □ A lot of times □ Sometimes □ Never		
		Thesaurus	☐ A lot of times ☐ Sometimes ☐ Never	
212	Have you written an email or chat message on a computer?	□ Yes □ No		
	If so, how many times (or how often)?	□ 1 time □ 2 or more times		
		☐ Once a month ☐ Every other week ☐ Every week ☐ A couple of times a week		
		☐ Every day ☐ Other		
213	Have you ever taken a test or practice test on a computer?	□ Yes □ No		
214	If so, how many times (or how often)?	□ 1 time □ 2 or more times		
		☐ Once a month ☐ Every other week ☐ Every week ☐ A couple of times a week		
		□ Every day □ Other		

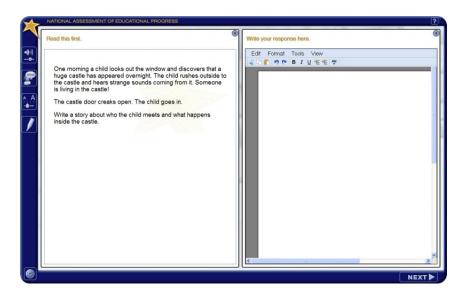
## **Part III – Student Paper Design Preference**

Ref #	Facilitator Question	Observer Notes
301	Now I'm going to show you some paper pictures of what some computer screens look like. I'm going to ask you some questions about what you are seeing and what you think things are on the paper. Ready?  [Show Design A, B, or C in random order for each student; note which design.] (Refer to Part III-A on pp. 7-8 of this submission.)  This is a picture of a computer screen. Can you tell me what you could do on this screen?  [Let student tell as much as possible before prompting with the following suggestions.]  [Point to a particular button or feature and say,] What could you do with this?  [Repeat above as needed for screen features. Also, add from the following questions to develop the student's thinking further.]  Is there anything more you can tell me about that?  Why do you think that?  What about the screen made you think that way?  Have you seen something else like this on the computer? If so, what and where?	During the Paper Design Preference phase, observers should note or probe for the following design, tools, navigation, and word processing features for each sample design:  Volume control Text-to-speech control Highlighter Zoom Timer Open/close buttons Next button Cut Copy Paste Undo Redo Bold Italicize Underscore Indent Spell check Thesaurus Comments on navigational features Comments on whether and how did the different layouts make a difference in their choice All other comments

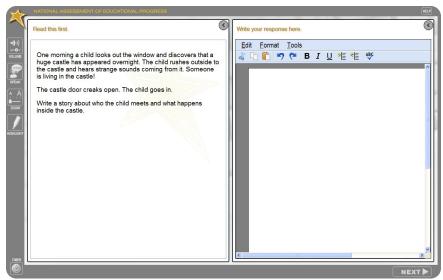
Ref #	Facilitator Question	Observer Notes
	[When done with first design, put it aside and do the same for the second design.]	
202	[Show second design; note which design.]	Note same types of observations as listed in the observer notes sections of 301.
302	This is a picture of a computer screen. Can you tell me what you could do on this screen?  [Let student tell as much as possible before prompting	
	with the following suggested prompts.]  [Point to a particular button or feature and say,] <i>What</i>	
	could you do with this?  [Repeat above as needed for screen features. Also, add	
	from the following questions to develop the student's thinking further.]	
	Is there anything more you can tell me about that?  Why do you think that?	
	What about the screen made you think that way?	
	Have you seen something else like this on the computer? If so, what and where?  [When done with second design, put it aside and do	
	the same for the third design.]	

Ref #	Facilitator Question	Observer Notes
303	[Show third design; note which design.]	
	This is a picture of a computer screen. Can you tell me what you could do on this screen?	Note same types of observations as listed in the observer notes sections of 301.
	[Let student tell as much as possible before prompting with the following suggested prompts.]	
	[Point to a particular button or feature and say,] <i>What could you do with this?</i>	
	[Repeat above as needed for screen features. Also, add from the following questions to develop the student's thinking further.]	
	Is there anything more you can tell me about that?	
	Why do you think that?	
	What about the screen made you think that way?	
	Have you seen something else like this on the computer? If so, what and where?	
	Now I'm going to bring all three pictures back out together so you can see them at the same time. Of the three screens, which one looks the most like a computer you have used before to write on the	
	computer?	
	Which one do you like the best?	
	I am going to have you look at two of these screens on the laptop computer. Which one do you want to try first on the real laptop?	

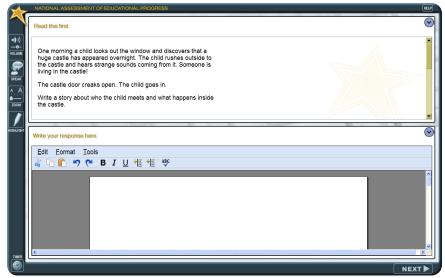
## **Part III-A – Paper Designs**



This paper version of Design A will be used to elicit student preference of text editor design.



This paper version of Design B will be used to elicit student preference of text editor design.



This paper version of Design C will be used to elicit student preference of text editor design.

## Part IV-A1 – Student Tasks on Interface Prototypes

Ref #	Facilitator Questions	Observer Notes
	PART IV-A: Student Tasks on the Interface	
	Prototypes.	
400-A	[Open the laptop and log the student in. Open the interface the student chose as 1st choice.  Allow the student to freely explore the application. During the free exploration, ask the student questions about why he clicked on something, what he thought a button would do and whether it did what he thought (expectations), and how does he think it should work.  The Observer will use the separate note sheet to record performance success or difficulty and other observations by answering the questions in the Observer Notes column.]	
401-A	[Interface opens]  Can you tell or show me what you can do here?  Which color do you like best for the screen?  Can you tell or show me what you would do to begin the writing test?	Was the student able to change the skin color? What skin color did the student leave it on? Was the student able to navigate to the Prompt screen using the <b>Next</b> button?
402-A	ZOOM  Do you see a way to make any of the words larger or smaller on the screen?  Show me how you would do it.	If the student used the zoom feature, what <b>text size level</b> did the student keep for the longest time? Which area(s) did the student focus on when using the <b>text enlarging</b> feature?

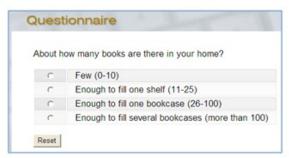
Ref #	Facilitator Questions	Observer Notes
403-A	HIGHLIGHT Do you see a way to highlight some words on this screen? Show me how you would do it.	Did the student <b>select text</b> in the prompt either to highlight or use text-to-speech?  Did the student try to click the highlighter first and then try to highlight text (i.e. the opposite of how it currently works)?
404-A	TIMER  Do you know whether this is a timed test? How do you know?  Can you tell me how much time is left in the test?	Did the student <b>check the timer display</b> and leave it on? Did the student turn off the <b>timer display</b> when it came on automatically?
405-A	WORD PROCESSING PANEL Show me how you would begin writing to respond to this prompt.	Was the student able to find/ <b>open the Write</b> panel?
406-A	Can you type some words for me?  How about a sentence? [Wait as student types.]	Does the student look at the keyboard while typing? Does the student have to look for each letter, for a lot of letters, or only for a few letters?
	Can you show me how you would change or delete a word?	Did the student use, delete, back space, cut copy, paste (indicate which, if any)?
	Can you show me how you would make a word or some words stand out to be more noticeable?	Did the student use bold, italics or underscore (indicate which, if any)?
407-A	Do you know how to indent the start of a paragraph? Show me how you would do it.  Do you know how you would check the spelling of the words in your sentence? Show me how you would do it.  Do you know how you would find another word to use in place of something you want to say? Show me how you would do it	Did the student use the indent key on the tools menu, or the tab key?  Did the student right-mouse click or use the tools menu?  Did the student use the Thesaurus on the tools menu?

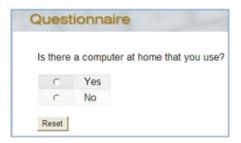
Ref #	Facilitator Questions	Observer Notes
408-A	IF STUDENT REACHES A HOLDING PAGE	
	What happened when you clicked the Next button?	
	What did you think would happen?	
409-A	BACKGROUND QUESTIONS (refer to Part IV-A1a)	
100 11	In this section, you are going to answer some	
	questions about yourself. When you are ready, you	
	can begin.	
410-A	RADIO BUTTONS	Is student able to choose an answer by clicking radio buttons?
411-A	RESET BUTTON / CLEAR BUTTON	
	Can you tell me what this button does?	
	Is there anything else you can do on this page?	
412-A	NO ANSWER POPUP	
	Can you tell me whether you can click NEXT without	
	answering a question? Try it and see what happens.	
	Can you tell me what this message means and what	
	you should do?	

### Part IV-A1a – Background Questions

These are the four background questions that will be used in each design, as shown in Design A. The design and location of the functions will change in Design B and C to determine the most effective placement of the Reset button and whether the No Answer popup message is effective.







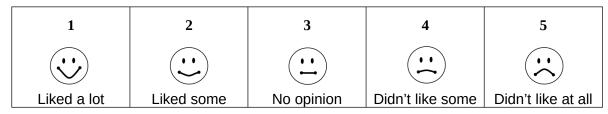


### Part IV-A2 - Student Survey

### What Do You Think?

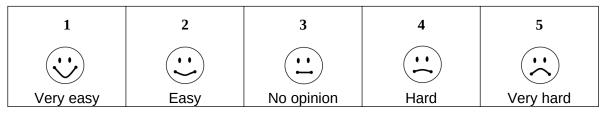
Circle one number from 1 to 5 for each statement below that best describes what you think. You can write anything you want below each statement.

1. Did you like using the laptop to type your writing?



What I think:

2. How easy or hard was it to read the directions?

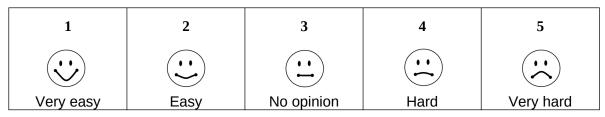


What I think:

3. How easy or hard was it to type your answer?

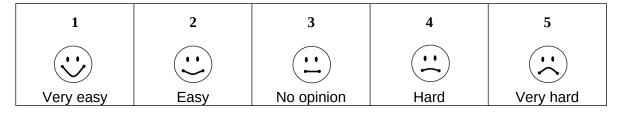
1	2	3	4	5
Very easy	Easy	No opinion	Hard	Very hard

4. How easy or hard was it to zoom to make the words larger?



What I think:

5. How easy or hard was it to listen to the computer read the words?



What I think:

6. How easy or hard was it to highlight some words?

1	2	3	4	5
Very easy	Easy	No opinion	Hard	Very hard

Part IV-A2 – Student Survey	Design Reviewed Participant #

## Part IV-B1 – Student Tasks on Interface Prototypes

Ref #	Facilitator Questions	Observer Notes
	PART IV-B: Student Tasks on the Interface	
	Prototypes.	
100 =		
400-B	[Open the laptop and log the student in. Open the	
	interface chosen by the facilitator as the 2 <sup>nd</sup> prototype.	
	Allow the student to freely explore the application.	
	During the free exploration, ask the student questions	
	about why he clicked on something, what he thought a	
	button would do and whether it did what he thought	
	(expectations), and how does he think it should work.	
	The Observer will use the separate note sheet to	
	record performance success or difficulty and other	
	observations by answering the questions in the	
	Observer Notes column.	
401-B	[Interface opens ]	
	Can you tell or show me what you can do here?	Was the student able to change the skin color?
		What skin color did the student leave it on?
		Was the student able to navigate to the Prompt screen using the <b>Next</b> button?
	Which color do you like best for the screen?	
	Can you tell or show me what you would do to	
	begin the writing test?	
402-B	ZOOM	If the student used the zoom feature, what <b>text size level</b> did the student keep for the
+02-D	Do you see a way to make any of the words larger or	longest time? Which area(s) did the student focus on when using the <b>text enlarging</b>
	smaller on the screen?	feature?
	Show me how you would do it.	

Ref #	Facilitator Questions	Observer Notes
403-B	HIGHLIGHT Do you see a way to highlight some words on this screen? Show me how you would do it.	Did the student <b>select text</b> in the prompt either to highlight or use text-to-speech?  Did the student try to click the highlighter first and then try to highlight text (i.e. the opposite of how it currently works)?
404-B	TIMER Do you know whether this is a timed test? How do you know? Can you tell me how much time is left in the test?	Did the student <b>check the timer display</b> and leave it on? Did the student turn off the <b>timer display</b> when it came on automatically?
405-B	WORD PROCESSING PANEL Show me how you would begin writing to respond to this prompt.	Was the student able to find/ <b>open the Write</b> panel?
406-B	Can you type some words for me?  How about a sentence? [Wait as student types.]  Can you show me how you would change or delete a	Does the student look at the keyboard while typing? Does the student have to look for each letter, for a lot of letters, or only for a few letters?
	word?  Can you show me how you would make a word or some words stand out to be more noticeable?	Did the student use, delete, back space, cut copy, paste (indicate which, if any)?
		Did the student use bold, italics or underscore (indicate which, if any)?

Ref #	Facilitator Questions	Observer Notes
407-B	Do you know how to indent the start of a paragraph?	Did the student use the indent key on the tools menu, or the tab key?
	Show me how you would do it.	
	Do you know how you would check the spelling of the	
	words in your sentence? Show me how you would do it.	Did the student right-mouse click or use the tools menu?
	Do you know how you would find another word to use in place of something you want to say? Show me how you would do it )	Did the student use the Thesaurus on the tools menu?
	Have you used any of these before? If so, how many times or how often do you use them when you write on a computer?	
	Spell check	
	Thesaurus Cut/copy/paste	
	Bold/italicize/underscore	
	Backspace	
	Delete	
	Indent	
408-B	IF STUDENT REACHES A HOLDING PAGE	
	What happened when you clicked the Next button? What did you think would happen?	
	what ald you think would happen:	
409-B	BACKGROUND QUESTIONS (refer to Part IV-A1a,	
	on p. 13 of this submission)	
	In this section, you are going to answer some	
	questions about yourself. Do not worry if they are the same questions you have already answered because	
	we are we are not keeping track of the answers. When	
	you are ready, you can begin.	
410-B	RADIO BUTTONS	Is student able to choose an answer by clicking radio buttons?
411-B	RESET BUTTON / CLEAR BUTTON	
	Can you tell me what this button does?	
	Is there anything else you can do on this page?	

Part IV-B1 - Stu	dent Tasks on	Interface	Designs
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<b>Design Reviewed</b>	Participant #

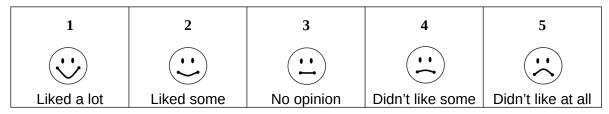
Ref #	Facilitator Questions	Observer Notes
412-B	NO ANSWER POPUP	
	Can you tell me whether you can click NEXT without	
	answering a question? Try it and see what happens.	
	Can you tell me what this message means and what	
	you should do?	

### Part IV-B2 - Student Survey

#### What Do You Think?

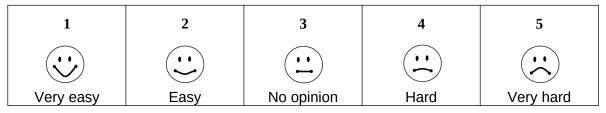
Circle one number from 1 to 5 for each statement below that best describes what you think. You can write anything you want below each statement.

1. Did you like using the laptop to type your writing?



What I think:

2. How easy or hard was it to read the directions?



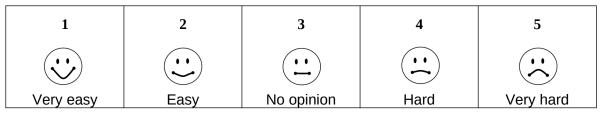
What I think:

3. How easy or hard was it to type your answer?

1	2	3	4	5
Very easy	Easy	No opinion	Hard	Very hard

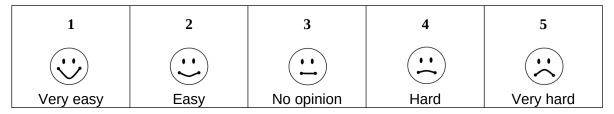
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4. How easy or hard was it to zoom to make the words larger?



What I think:

5. How easy or hard was it to listen to the computer read the words?

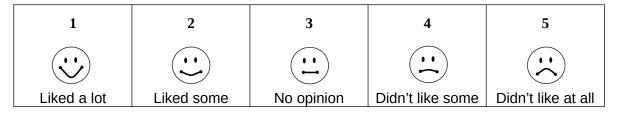


What I think:

6. How easy or hard was it to highlight some words?

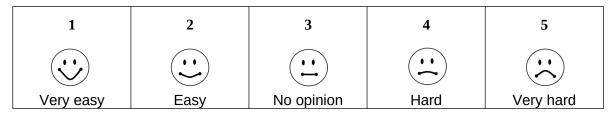
1	2	3	4	5
Very easy	Easy	No opinion	Hard	Very hard

7. If you used it, how easy or hard was it to make your words bold or italic?



What I think:

8. If you used it, how easy or hard was it to use the Spell Checker?



What I think:

9. How easy or hard was it to answer the background questions?

1	2	3	4	5
Very easy	Easy	No opinion	Hard	Very hard

Designs Reviewed	/	Participant #	
Designs Reviewed	/ !	Participant#	

### **Part V – Student Design Comparison**

### **Compare the Writing Programs**

Tell us below how you feel about the writing computer programs you used today.

For each question, choose which program you liked best by putting a checkmark under its number.

Your Opinion	Program #1	Program #2
Which program had the best <u>directions</u> ?		
Which program had the <u>best reading</u> <u>section</u> ?		
Which program had the <u>best writing</u> <u>section</u> ?		
Which program was <u>easiest to use</u> ?		
Which did you like better?		

What was something you really liked about either of the programs?
Program #1:
Program #2:
Was there <u>something you really did not like</u> about either of the programs?
Program #1:
Program #2:

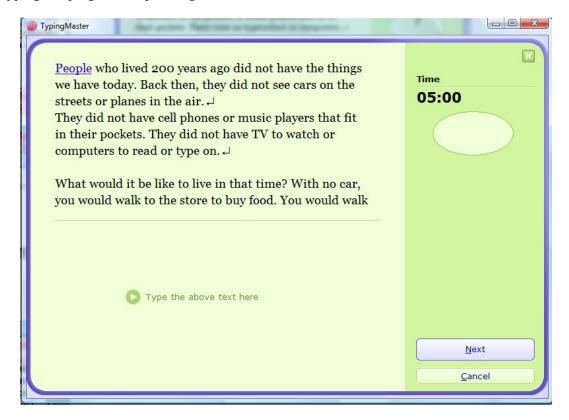
#### Part VI - Typing Test

Facilitator: *Now we'd like to have you type a paragraph by typing it in this typing program.* 

I'm going to open the program on the laptop and enter your number. You will type as best as you can for 5 minutes. Look at the words at the top of the screen and type them in the box underneath. Don't stop and try to correct any mistakes you make, just keep typing as well as you can for 5 minutes.

When you are ready, press the button to begin.

Typing test program sample image:



#### Complete typing passage:

People who lived 200 years ago did not have the things we have today. Back then, they did not see cars on the streets or planes in the air.

They did not have cell phones or music players that fit in their pockets. They did not have TV to watch or computers to read or type on.

What would it be like to live in that time? With no car, you would walk to the store to buy food. You would walk or ride a bike to see a friend. To go on a long trip, you would ride a horse, sit in a buggy, or take a train. Most people did not travel very far at all.

With no phone or computer, it would take longer to send a note to a friend or to your family. You would write letters with a pen and some ink, then you would have to mail the letter. It could take days or weeks to get where you sent it!

With no TV, you might spend more time reading books or playing outside. You would go to a play or a concert to hear music.

A lot of people like to think the slower pace of life 200 years ago would be a nice way to live. But other people do not think they would like to live with the old, slower ways of travel, of visiting with friends or family, or of having fun.

Some people think instead they would like to live in the future. What kinds of changes do you think there will be 200 years from now?

Do you think we will still travel in cars and planes, or in something else? How will we listen to music or send notes to our friends? What kinds of games will we play? There can be a lot of changes in the next 200 years, just as there have been in the last 200 years.