

# TECHNOQuestionnaire

## Teacher Guide

Lessons for Middle & High School Students: Grades 6 - 9



Technology Project using

## Google Forms

Research an issue.

In this project, students become researchers. They conduct a survey questionnaire to research an important issue. To begin, students gain an understanding about the purpose of surveys by completing a Reading Habits questionnaire. Next, they design their own School Spirit survey to learn how to use Google Forms. Once familiar with this method of data collection, they develop their own research question, select a sample, and design a questionnaire. A pre-test is used to improve the design. The survey questionnaire is then administered to the sample group. Once the data is collected it is analyzed. Research findings are shared with a jury of peers in an oral presentation.

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# Table of Contents

TechnoQuestionnaire Overview .....	i
Technology Integration Ideas .....	ii
Prepare to Teach TechnoQuestionnaire .....	iv
Assignment 1 What is a Survey Questionnaire? .....	1
What is a Survey Questionnaire? .....	1
How Do People Use Data from Survey Questionnaires? .....	1
Get to Know Survey Terminology .....	2
Assignment 2 Compare a Poll and a Survey .....	3
Take a Poll .....	3
Take a Survey .....	3
Questions about the Poll and Survey .....	4
Assignment 3 Study Survey Results .....	5
View Reading Habits Survey Results .....	5
About the Survey Results .....	5
Questions about the Survey Results .....	6
Assignment 4 Create a School Spirit Survey .....	7
Create a New Form .....	7
Add a Title and Survey Description .....	7
Ask a Question that Identifies Information about the Respondent using a Dropdown List .....	7
Ask a Question that Lets a Person Pick from a Checklist .....	8
Ask a Question that Limits the Number of Choices Selected from a Checklist .....	8
Ask a Multiple-Choice Question and Shuffle the Option Order .....	9
Use a Rating Scale to Measure School Spirit .....	9
Use a Grid to List Multiple Items with a Scale .....	10
Allow People to Share Ideas with a Paragraph Box .....	10
Set the Confirmation Page .....	11
Test the Form .....	11
Edit any Mistakes .....	12
View Responses .....	12
Questions about the School Spirit Survey .....	12
Assignment 5 Organize Ideas for a Survey Questionnaire .....	13
Brainstorm an Idea for Your Survey .....	13
What is the Purpose of the Survey? .....	13
Who Should Complete the Survey? .....	13
What Method Will You Use to Collect Data? .....	13
What Questions Will You Ask? .....	14
Assignment 6 Build a Survey .....	16
Sign into Google Drive and Create a New Form .....	16
Add Survey Name and a Welcome Message .....	16
Create a Dropdown List to Learn about the Respondent .....	16
Make a Checklist to Let People Pick More than One Answer .....	16
Add a Multiple-Choice Question to Find Out What People Like the Most .....	17
Use a Rating Scale to Gather Information about Opinions or Behavior .....	17
Allow People to Share Ideas .....	17
Add Remaining Questions .....	17
Adjust Order of Questions .....	18
Set the Confirmation Page .....	18
Customize the Theme .....	19
Test the Form – Complete the Checklist .....	19

Edit any Mistakes .....	20
Assignment 7 Conduct a Pre-Test.....	21
Open the Survey in Google Forms .....	21
Share Your Device or Email a Link to a Friend .....	21
Have Your Friend Review the Survey using a Checklist .....	22
Discuss Results of the Pre-Test .....	22
Edit the Survey .....	22
Assignment 8 Collect Survey Results.....	23
Open the Survey in Google Forms and Delete Pre-Test Data .....	23
Option 1 Use a Mobile Device.....	23
Option 2 Email the Form .....	24
Option 3 Post a Link.....	24
Assignment 9 View Survey Results.....	25
Open the Survey in Google Forms and View the Survey Responses .....	25
View the Survey Results in a Spreadsheet.....	25
Customize the Layout of the Worksheet .....	26
Sort the Contents of a Column.....	26
View Summary of Responses .....	26
Assignment 10 Analyze Survey Results .....	27
Examine the Survey Results .....	27
Answer Questions to Organize Ideas for the Oral Presentation .....	27
Assignment 11 Present Findings to a Jury of Your Peers .....	29
Rehearse Presentation.....	29
Prepare to Present Findings .....	30
Give the Presentation .....	30
Extension Activity 1: What is Sample Bias?.....	31
Extension Activity 2: What is Question Bias? .....	32
Extension Activity 3: Brainstorm Survey Ideas .....	33
Extension Activity 4: Compare Results with a Pivot Table .....	35
Extension Activity 5: Graph Results in a Pivot Chart.....	37
Appendix A: Assessment Tools .....	39
Questionnaire Marking Sheet .....	39
Questionnaire Presentation Rubric .....	40
Questionnaire Skill Summary .....	41
Appendix B: Material List.....	42

# TechnoQuestionnaire Overview

<p><i>Purpose:</i> Conduct a survey questionnaire and analyze the results.</p>	<p><i>Preparation:</i> (see <i>Preparing to Teach</i>)</p> <ul style="list-style-type: none"> <li>• Sign up for a Google Account</li> <li>• Install Adobe Reader or other PDF app</li> <li>• Share <i>Questionnaire</i> folder with students</li> <li>• Prepare <i>TechnoQuestionnaire</i> folder for Google Drive (optional step for Assignment 2)</li> <li>• Download and print Flashcards and Tool Summary from <a href="#">TechnHub</a> (optional)</li> </ul>
<p><i>Objectives:</i> (see <i>Appendix A: Skill Summary</i>)</p> <ul style="list-style-type: none"> <li>• understand the purpose of a survey</li> <li>• investigate a research question</li> <li>• select a sample from the population</li> <li>• identify bias in data collection methods</li> <li>• organize categorical data</li> <li>• design questions to gather data</li> <li>• collect data by conducting a survey</li> <li>• display data in charts, tables, graphs</li> <li>• interpret results to draw conclusions</li> <li>• make convincing arguments</li> <li>• summarize findings in a report</li> <li>• evaluate the quality of a survey</li> <li>• compare subgroups (optional)</li> </ul>	<p><i>Materials:</i> (see <i>Appendix B: for a complete list</i>)</p> <ul style="list-style-type: none"> <li>• Assessment Tools</li> <li>• Sample Files</li> <li>• Questionnaire folder</li> <li>• TechnoQuestionnaire Google Drive folder (optional)</li> <li>• Parent Letter and Certificate (optional)</li> <li>• Flashcards and Tool Summary (optional)</li> </ul>
<p><i>Summary of Activities:</i></p> <ul style="list-style-type: none"> <li>• Gain an understanding of the purpose of survey questionnaires. Introduce terminology.</li> <li>• Compare a Reading Habits poll and survey to understand their purpose and design.</li> <li>• Study results from the Reading Habits survey. Learn how question types are graphed.</li> <li>• Create a School Spirit survey to discover the range of questions that can be asked.</li> <li>• Organize ideas for a survey questionnaire using a planning sheet.</li> <li>• Build a survey using Google Forms.</li> <li>• Conduct a pre-test using a checklist. Discuss the design and make improvements.</li> <li>• Administer the survey to collect the results.</li> <li>• Analyze survey results. Evaluate the survey questionnaire.</li> <li>• Report the findings in an oral presentation.</li> </ul>	
<p><i>Extension Activities:</i></p> <ul style="list-style-type: none"> <li>• Answer questions about sample bias.</li> <li>• Answer questions about question bias.</li> <li>• Brainstorm survey ideas.</li> <li>• Compare results from subgroups using a pivot table. (advanced activity)</li> <li>• Compare results from subgroups using a pivot chart. (advanced activity)</li> </ul>	
<p><i>Assessment:</i></p> <ul style="list-style-type: none"> <li>• Self-Evaluation (Questionnaire Checklist – Assignment 6)</li> <li>• Peer-Evaluation (Questionnaire Peer Review – Assignment 7)</li> <li>• Teacher Evaluation (Questionnaire Marking Sheet, Questionnaire Presentation Rubric, Questionnaire Skill Summary)</li> </ul>	
<p><i>Notes:</i></p> <ul style="list-style-type: none"> <li>• Survey results are stored in a spreadsheet. It is beneficial for students to have a basic understanding of the spreadsheet environment, although not essential.</li> <li>• These activities are designed to help students understand the research process. It may not be possible to have a suitable sample size for the population; accept this as a limitation. Aim to survey 8-10 people.</li> </ul>	

# Technology Integration Ideas

TechnoQuestionnaire integrates into mathematics or science curriculum. There are eight steps to conducting a survey questionnaire. Students complete each step in the research process:

1. *Set the Purpose* – Determine the reason or goal of the survey.
2. *Pick Sample* – Select the group of people that will take the survey.
3. *Choose Survey Method* – Decide on the technique used to collect data.
4. *Create Questionnaire* – Design questions to measure behavior, opinions or beliefs.
5. *Pre-test* – Take the survey to find errors and make improvements to the survey.
6. *Conduct Survey* – Gather data by emailing a form or sharing a link to the survey.
7. *Analyze Results* – Study the data in a spreadsheet and as graphs.
8. *Report Findings* - Explain research findings in an oral presentation.

## Survey Questionnaire Suggestions:

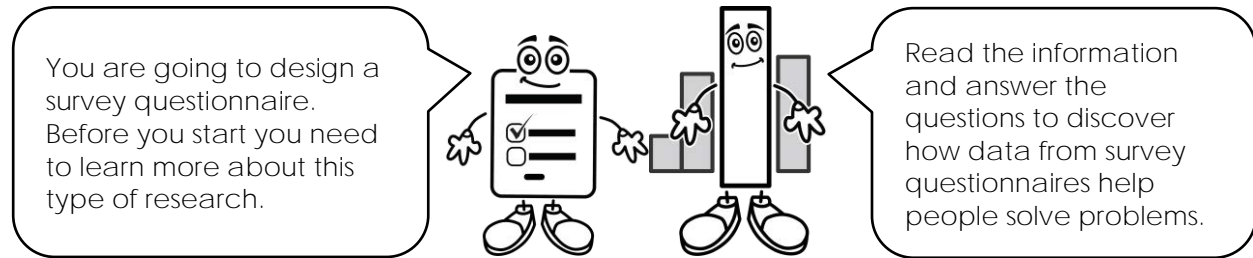
- ✓ *Brainstorm to Generate a Research Question:* Picking a research question can be quite difficult. A great way to have your students determine what they would like to study is to complete the *Extension Activity 1 Brainstorm Survey Ideas*. If time is an issue, you may want to select several ideas and allow students to pick from your list.
- ✓ *Pose Relevant Research Question:* It is a good idea to have students select a meaningful research question whose results can be used to describe or improve a situation related to themselves. This gives the activity a greater purpose. For example, students could investigate new materials for the library; clubs offered to students; or ways to increase involvement in the school play.
- ✓ *Form Research Teams:* Developing a survey questionnaire requires a high-level of critical thinking to generate meaningful, relevant questions. Form pair groups. This will allow students to discuss their ideas together.
- ✓ *Pick a Population and Sample Group that is Easy to Access:* Consider having students select their sample from a population that they can research while at school. For example, they could select a particular class, grade, club, age, or group such as teachers, parents, students, or teenagers.
- ✓ *Plan Ahead to Survey the Sample Group:*
  - *Mobile Survey* – Will students give participants the survey using a mobile device such as a phone or tablet? This method will require devices and WIFI.
  - *Email Survey* – Will students email the survey to participants? This method will require students to compile a list of email addresses ahead of time.
  - *Web-based Survey* – Will students provide a link to the survey on a piece of paper, or digitally using a web page or bookmark? This method will require students to post the link ahead of time.
  - *Survey Document* – Do you need an easy solution for giving many surveys to other classes? Create a document that includes a numbered list of Survey Titles. Create a hyperlink from each Survey Title to its survey. Provide participants access to the document and the survey number they should take.

- ▷ *Managing the Logistics of Data Collection:* If you have one or more classes completing this project you have MANY students needing to collect data.
  - *Participants are from the Same Class:* Assign each student in a class 10 surveys they must complete so that everyone has enough data to analyze.
  - *Participants are from Specific Grades or Classes:* Request permission from other classroom teachers for their students to take surveys. Create a *Survey Document* (as described previously) to give a large group of participants access to surveys.
  - *Participants are from a Range of Grades, Classes, or Clubs:* Open the survey on a mobile device. Set up the device in the hallway, library, foyer, or other location. Invite participants to complete the survey.
  
- ▷ *Delve Deeper into Research Design:* Depending on the age of your students you may want to focus on concepts such as sample bias or question bias. If these areas are important to you complete *Extension Activities 1 and 2*.
  
- ▷ *Assessment and Evaluation:* Several tools are provided to assess and evaluate the questionnaire and presentation of findings. These documents are customizable and are in the *Assessment Tools* folder.

NOTE | Mean, Medium, and Mode

Your curriculum documents may list teaching *mean*, *medium*, and *mode* as part of a survey project. This requires qualitative or "numbered" data. Since most questions in the survey questionnaire provide categorical or "text" data, those concepts are not taught.

# Assignment 1 What is a Survey Questionnaire?



What is a Survey Questionnaire?

A survey questionnaire is a list of questions given to a group of people to gather information about their behavior, opinion, or beliefs. Data is then analyzed with the results being used to show what a larger group of similar people might do, think, or believe.

People can answer a survey questionnaire by taking part in an interview, filling out a paper form, or by completing an online survey.

1. Have you ever completed a survey questionnaire? If yes, what was the survey about?

How Do People Use Data from Survey Questionnaires?

People use survey questionnaires to gain an understanding about a situation. They use this information to make decisions. For example, survey data can help assess opinions, identify problems, highlight areas in need of change, or determine products to buy.

Survey questionnaires are used by professionals every day in the workplace:

- ✓ Business owners use survey questionnaires to assess customer satisfaction with their service or product. They use this information to make improvements.
  - ✓ Marketers use survey questionnaires to test if an advertisement will attract attention. They use this information to adjust designs, promotional offers, or the product launch plan.
  - ✓ Politicians use survey questionnaires to learn what voters think about issues. They use this information to propose new laws or adjust their campaign.
  - ✓ Event planners use survey questionnaires to identify the needs of attendees. They use this information to organize refreshments, room preference, or accommodate other requests.
  - ✓ Psychologists study the human mind. They use survey questionnaires to gather knowledge from people to treat health problems or design intervention programs.
  - ✓ Sociologists study human behavior. They use survey questionnaires to gather knowledge from people about their situation to describe social problems and develop solutions.
2. People use survey questionnaires to do their job.  
How could your teacher use a survey questionnaire to improve learning?

- Discover student interests to pick topics to study.
- Understand students' fears about learning such as deadlines, tests, or presentations.

## Get to Know Survey Terminology

The person who conducts the survey questionnaire is called a *researcher*.

The person who takes the survey questionnaire is called a *respondent* or *participant*.

Answer the questions to discover the meaning of other terminology:

*population*

*sample*

*sample bias*

*random sampling*

*question bias*

3. Surveys are used to learn about a large group of people, called a *population*. A small group of people, called a *sample*, is selected from this group to take the questionnaire. Why do you think a questionnaire is not given to everyone in the population?

too many people in the population

difficult to collect data from everyone in a population

4. *Sample bias* occurs if types of people in a population are excluded from taking a survey. Sample bias gives an inaccurate result because the people taking the survey do not resemble the population.

Which sample shows the least bias?

The teacher is going to decide on an end of year school trip.

survey boys in the class

survey girls in the class

survey both girls and boys in the class

5. To remove sample bias, it is a good idea to pick people to take the survey randomly. *Random sampling* gives each person in the population an equal chance of being selected.

Which sampling technique would you use to collect data?

The parent committee has raised money and needs to decide where to spend it.

ask everyone who stayed after school for soccer tryouts

ask people in the music room at lunch

ask every tenth student as they enter the school in the morning

6. A researcher must be fair and objective. *Question bias* occurs when the wording hints at the answer the researcher wants people to pick. Leading questions can give inaccurate results.

Which wording shows the least bias?

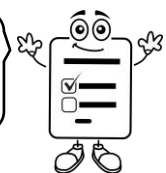
Students want a new playground structure.

Should we add a new slide instead of keeping the terrible one we currently have?

Should we add a new slide instead of keeping the great one we currently have?

Should we add a new slide to the playground?

Complete Extension Activities 1 and 2 to learn more about sample bias and question bias.




# Assignment 4 Create a School Spirit Survey

Before you can start making your own survey you need to learn how to use Google Forms to create a questionnaire. This assignment will help you understand the range of questions you can ask and how to control data entry, so results can be analyzed easily.

School spirit needs a boost! The student council is conducting a survey to discover the level of school spirit, what events students like, and ideas to increase participation. Design the questionnaire using Google Forms.

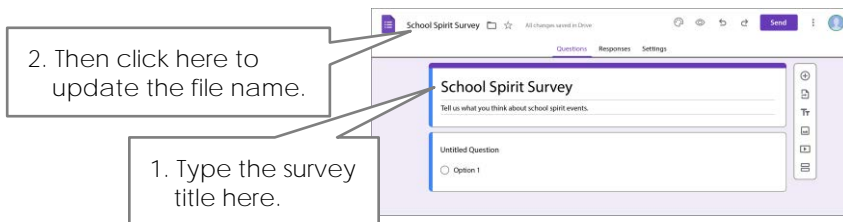


## Create a New Form

- ▶ Sign into Google Drive.
- ▶ Click *New*. From the list select *Google Forms*. 

## Add a Title and Survey Description

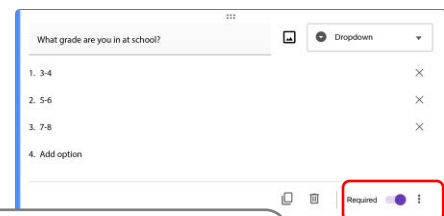
- ▶ Type a survey title such as *School Spirit Survey*.  
Type in a description such as *Tell us what you think about school spirit events*.
- ▶ Click *Untitled Form* at the top to automatically update the file name.



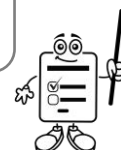
## Ask a Question that Identifies Information about the Respondent using a Dropdown List

Most surveys are anonymous. The person who takes the survey is unknown. This is done to encourage honesty as there is no fear of being identified. Instead of asking a person's name you can ask for demographics. Demographics such as age, gender, or grade are important data to collect because these factors may influence what a person does, thinks, or believes. For example, grade may influence school spirit. To find out, make a Dropdown list of grade choices.

- ▶ Click *Untitled Question*.  
Type *What grade are you in at school?*
- ▶ Select *Dropdown* as the question type.
- ▶ Replace *Option 1* with a grade range such as 3-4.
- ▶ Click *Add option*. Type a grade range such as 5-6.
- ▶ Click *Add option*. Type a grade range such as 7-8.
- ▶ Click *Required*.




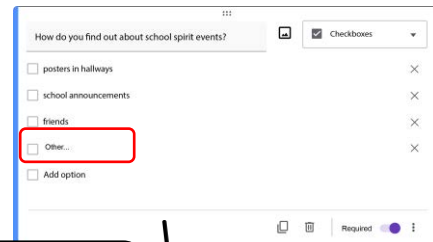
Select *Required* to ensure the question is answered.



## Ask a Question that Lets a Person Pick from a Checklist

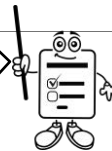
You need to find out how students learn about spirit activities. This will help you know what forms of advertising are working. A list can be created to allow a person to pick one or all of the choices or even type in their own answer.

- ▶ Click *Add question*  from the Tools panel.
- ▶ In the *Question* box type *How do you find out about school spirit events?*
- ▶ Select *Checkboxes* as the question type.
- ▶ Add the choices:
  - *posters in hallways*
  - *school announcements*
  - *friends*
- ▶ Click *add "Other"*.
- ▶ Click *Required*.





The screenshot shows a question editor for a checklist question. The question text is "How do you find out about school spirit events?". The question type is set to "Checkboxes". The list of choices includes "posters in hallways", "school announcements", "friends", "Other...", and "Add option". The "Other..." option is highlighted with a red box. At the bottom right, there is a "Required" toggle which is turned on.

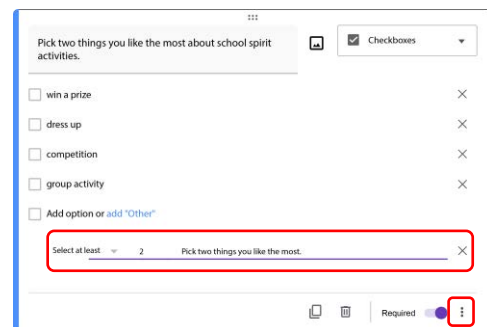
Allow a person to add their own answer if none of the choices apply.



## Ask a Question that Limits the Number of Choices Selected from a Checklist

You need to find out which qualities students like about spirit days. A list can be set to allow a person to pick a fixed number of choices. This is a great way to learn what people like the most. Create a list and restrict the number of answers.

- ▶ Click *Add question*. 
- ▶ In the *Question* box type *Pick two things you like the most about school spirit activities.*
- ▶ Select *Checkboxes* as the question type.
- ▶ Add the choices:
  - *win a prize*
  - *dress up*
  - *competition*
  - *group activity*
- ▶ Click *Required*.
- ▶ Click *Advanced settings*. 
- ▶ Click *Response validation*.
- ▶ Set the number of choices:
  - In the first box pick *Select exactly*.
  - In the second box type *2*.
  - In the third box type *Pick two things you like the most.*





The screenshot shows a question editor for a checklist question. The question text is "Pick two things you like the most about school spirit activities.". The question type is set to "Checkboxes". The list of choices includes "win a prize", "dress up", "competition", "group activity", and "Add option or add 'Other'". At the bottom, there is a response validation section with a dropdown set to "Select at least", a text box containing "2", and a message box containing "Pick two things you like the most.". The "Required" toggle is turned on.

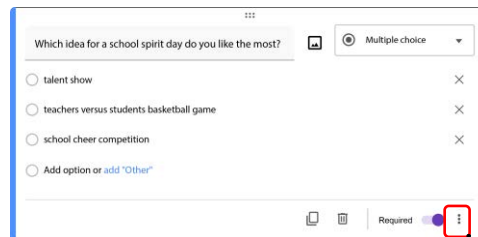
Add a message if a person picks the wrong amount.



## Ask a Multiple-Choice Question and Shuffle the Option Order

You want to offer new spirit activities that the majority of students will like. Multiple choice questions restrict a person to picking only one choice from a list. Create a list of activities and have students pick the one they like the most. You can use the answer to select your next school spirit day.

- ▶ Click *Add question*. 
- ▶ In the *Question box* type *Which idea for a school spirit day do you like the most?*
- ▶ Select *Multiple choice* as the question type.
- ▶ Add the choices:
  - *talent show*
  - *teachers versus students basketball game*
  - *school cheer competition*
- ▶ Click *Required*.
- ▶ Click *Advanced settings*.   
Select *Shuffle option order*.




Make the order random. This will stop one of the choices being picked more because of where it is placed in the list.

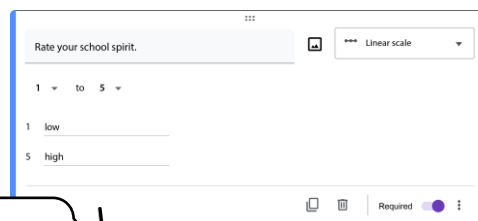


## Use a Rating Scale to Measure School Spirit

You need to find out how students rate their current level of school spirit. A scale offers a range, and the person picks where they fall within it.

Create a scale from 1-5, with 1 being low school spirit and 5 being high school spirit.

- ▶ Click *Add question*. 
- ▶ In the *Question box* type *Rate your school spirit*.
- ▶ Select *Linear scale* as the question type.
- ▶ Set the rating options:
  - Set the number range from *1* to *5*.
  - In the 1 box, type *low*.
  - In the 5 box, type *high*.
- ▶ Click *Required*.




Measure how people feel with a five-point scale.

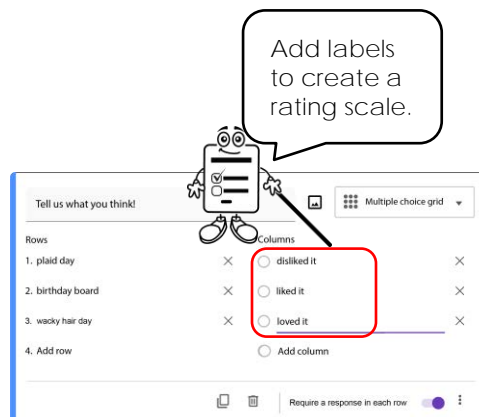


## Use a Grid to List Multiple Items with a Scale


You need to find out students' opinion of past spirit activities. A grid can be used to list many items that can then be rated. It is a great way to assess opinions because the choice is the same for every item.

Tell us what you think!			
	disliked it	liked it	loved it
plaid day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
birthday board	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
wacky hair day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- ▶ Click Add question. 
- ▶ In the *Question box* type **Tell us what you think!**
- ▶ Select *Multiple choice grid* as the question type.
- ▶ Add the activities:
  - In the Row 1 label type **plaid day**.
  - In the Row 2 label type **birthday board**.
  - In the Row 3 label type **wacky hair day**.
- ▶ Add the ratings:
  - In the Column 1 label, type **disliked it**.
  - Click *Add column*, type **liked it**.
  - Click *Add column*, type **loved it**.
- ▶ Click *Require a response in each row*.




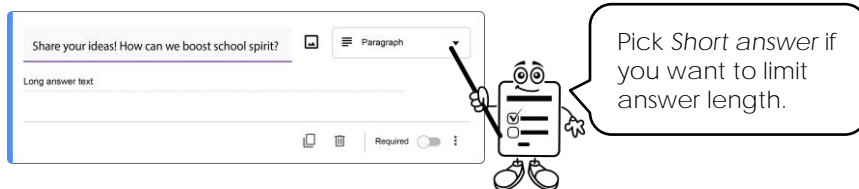
### TIP | Question Order

New questions are added after the last *selected* question. You can move a question by dragging it into position. Simply grab the *Move question*  handle at the top of the question box and drag to a new position.

## Allow People to Share Ideas with a Paragraph Box


You need spirit activities that students like so that they will join in the fun. Get people to share their ideas.

- ▶ Click *Add question*. 
- ▶ In the *Question box* type **Share your ideas! How can we boost school spirit?**
- ▶ Select *Paragraph* as the question type.
- ▶ You can leave the *Required* option off.

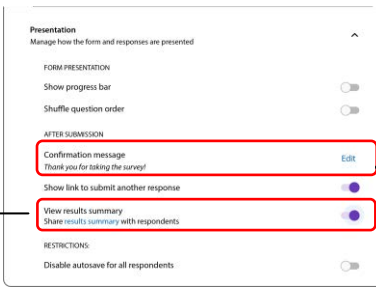


## Set the Confirmation Page

After a person takes the survey a *Confirmation* page is displayed. This page can be set to allow the respondent to take the survey again, edit responses, or view survey results.

- ▷ Click *Settings* at the top of the form. 
- ▷ Click the *Presentation* arrow.
- ▷ Drag the slider to enable *Share results summary with respondents*.

This option lets people see the results.



Click *Edit* to customize the confirmation message such as **Thank you for taking the survey!** Click *Save*.



## Test the Form

- ▷ Click *Preview*. 
- Complete the survey.

Pick a grade range. Are the options suited to your school?

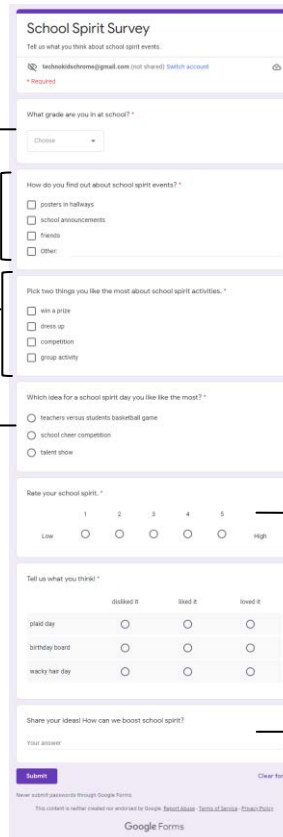
Check all the boxes. Type in a short answer for *Other*.

Check the first box.

Did a message about picking two choices appear?

Check *three* boxes. Did the error message reappear?

Pick only two boxes.



Pick a choice from the list. You should only be able to pick one option.



Try picking different rating options.

For each event pick a different rating option.

Type in a suggestion.

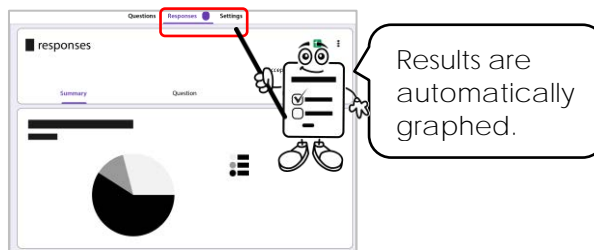
- ▷ Click *Submit*.

## Edit any Mistakes

- ▷ Close the tab with the confirmation page.  
The survey should still be open.
- ▷ Make any corrections.
  - Does a red star appear beside a question to show it is REQUIRED?
  - Is each question spelled correctly?
  - Is there an unwanted question? Click *Delete*. 
  - To move a question, click and drag it to a new location. 

## View Responses

- ▷ Click *Responses* to view graphed results.



## Questions about the School Spirit Survey

1. What is the purpose of the school spirit survey?

Learn students' opinion of school spirit events to design new activities students will join.

2. Do the questions help the school council achieve their purpose? Why or why not?

Yes. The survey results will inform school council about activities the majority of students will like.

3. A survey is usually given to a small group called a *sample*. The results are then used to generalize what a larger group of similar people called a *population* might think.

- a. What is the large group or population in this survey? **students in school**

- b. A sample must represent the larger group. If one grade took the survey could the school council generalize the results to the population? Why or why not?

No. The sample should have students from each grade not just one.

# Assignment 5 Organize Ideas for a Survey Questionnaire

It is important that a survey questionnaire is well designed because decisions are made based on the results. Answer the questions to organize your ideas.

## Brainstorm an Idea for Your Survey

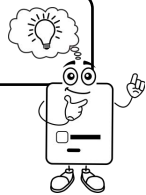
Pick an idea from the list below or come up with your own.

- report on access to technology
- research popular trends
- improve safety on the bus or at recess
- rate satisfaction with school library
- reduce bullying at school
- plan an upcoming school event
- gain support to start a new club
- develop a fundraising campaign
- increase participation in school programs
- set a homework policy
- select music for a school dance
- your idea

## What is the Purpose of the Survey?

1. What is the purpose of your survey?
  - describe a current situation
  - understand the opinion of others
  - identify needs or areas for change
  - assess satisfaction
  - develop a plan
  - design a program
  - solve a problem
  - organize an event
  - other:

Need ideas? Complete Extension Activity 3.



2. What is your research question?

## Who Should Complete the Survey?

3. a. What group of people do you want to study?  
You will apply your research findings to this large group (population).
- b. How many people will be in your sample group?  
You will need at least 8-10 people.
- c. How will you avoid sample bias?  
Make certain you do not exclude types of people that are in your population. Think about a person's gender, age, or grade.
- d. How will you pick people to take your survey?  
Random sampling gives each person in the population an equal chance of being picked.

If using email, you will need to gather email addresses.



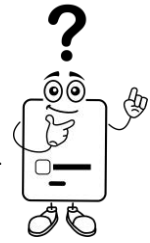
## What Method Will You Use to Collect Data?

4. How will people complete your survey?
  - mobile device
  - email the form
  - email a link
  - post a link on the Internet

## What Questions Will You Ask?

The survey must include 5-10 questions. Follow these tips:

- ask for one piece of information at a time.
- start with closed-ended questions that have people pick from a list of answers.
- place open-ended questions that allow short answers, at the end..
- avoid leading questions – do not word questions that hint at an answer.
- where appropriate, for checklists and multiple-choice questions, include the option "does not apply", "don't know", "not important to me", "I don't have x", or "other".



5. Demographics, such as gender or grade, can influence behavior or opinions. Create a dropdown list to learn about people in your sample group.

Pick an option.

Choose
option 1
option 2

My options are:

--	--	--	--	--

Is this question required?                      Y      N

6. Checkboxes allow people to pick more than one answer from a list. It is a great way to categorize behaviors or opinions. Ask a question that allows people to pick from a list.

Ask a question? Pick all that apply.

- choice 1
- choice 2
- choice 3

My question is:

--

My choices are:

--	--	--	--	--

7. A multiple-choice question allows people to pick one answer from a list. It is a good way to find out which option people prefer the most. Ask a multiple-choice question.

Ask a question?

- choice 1
- choice 2
- choice 3

My question is:

--

Is this question required?                      Y      N

8. A scale allows people to rate their opinion. A range can be *low to high, strongly disagree to strongly agree, never to always, unimportant to important, poor to excellent.*

	1	2	3	4	5	
low	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	high

Ask a question that asks people to rate their opinion.

My question is:

My scale is:

Is this question required?                      Y      N

9. A short answer allows people to type in a response, explain an answer, or suggest an idea.

**Ask an open-ended question that has people type in an answer.**

Your answer

Write an open-ended question that requires a short answer.

10. List other questions you will include in your survey.

You may want to use a grid to have people state many opinions. The columns can be yes/no, dislike/like/love, or disagree/undecided/agree.

Share your opinion

	never	sometimes	always
statement 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
statement 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
statement 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Assignment 7 Conduct a Pre-Test

You are almost ready to get people to answer your survey questionnaire. Before you send it to your sample group you need to give it to a friend to test.

A pre-test is a great way to decide which questions need to be re-worded, deleted, or added.

The pre-test will help you to answer the following questions to make improvements:

- Are the questions easy to understand?
- Does the survey take too long to complete?
- Do the multiple-choice and checklists give a person enough choice?
- Is the data collected useful or does another question need to be added?

Open the Survey in Google Forms

Share Your Device or Email a Link to a Friend

You can have your friend take the survey on your device. Or, if you like, you can give them a link, post the survey using social media, or send an email invitation. Follow the instructions below to email your friend a link. Ignore them if you have selected another method.

▷ Click *Send*.



▷ Type in your friend's email address. (It is best if it is a web-based account)

Type email address of your friend.

Add Survey Name as the subject.

You can add a message to the email.

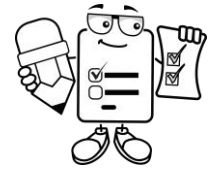
A 'Send form' dialog box with a close button (X) in the top right. It has a 'Collect emails' checkbox which is unchecked. Below that, 'Send via' is set to 'Email' with icons for email, social media, and a link. The 'Email' section has fields for 'To' (filled with 'friend@email.com'), 'Subject', and 'Social Media'. The 'Message' section contains the text 'Share your opinion. Take the survey!'. At the bottom, there is a checked checkbox for 'Include form in email' and a link for 'Add collaborators'. A cartoon character is pointing to the 'Include form in email' checkbox.

You can have the form appear in the email message. This works best if the person has a Gmail account.

▷ Click *Send*.

## Have Your Friend Review the Survey using a Checklist

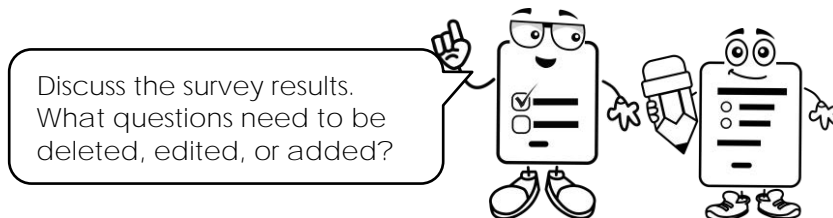
- ▷ If you sent an email, have your friend sign into their account and click on your message. They must click on the link to take the survey.
- ▷ Have your friend complete the checklist as they complete the survey. Discuss the results.



Survey Name:

	✓	✗
The survey is a suitable length. It is not too long or too short.		
The title describes what the survey is about.		
Checklists and multiple-choice questions offer good choices.		
Where appropriate, checklists and multiple-choice questions let a person pick "does not apply", "don't know", "not important to me", or "other".		
Rating scales give a suitable range.		
Short answer questions ask for important information.		
Each question is easy to understand.		
Important questions are required and cannot be skipped.		
The questions are organized in a logical order.		
The questions avoid bias and do not hint at an answer.		

## Discuss Results of the Pre-Test

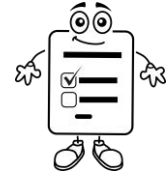


## Edit the Survey

- ▷ Use the results of the pre-test to make improvements to the survey.

## Extension Activity 1: What is Sample Bias?

A survey questionnaire is given to a sample group of people to gather information about their behavior, opinion, or beliefs. Data is then analyzed with the results being used to show what a larger group of similar people, called a population, might do, think, or believe.



Sample bias is when members of a population are excluded from taking a survey questionnaire. This gives an inaccurate result; as the people taking the survey are not similar to the population.

A school with 20 teachers is creating a policy for mobile devices. The principal wants to know the teachers' opinion about whether students should be able to listen to music during class.

*Purpose:* Create a mobile device policy.

*Research question:* Should students be able to listen to music during class?

1. Sample bias can occur when some members of a population are excluded from taking a survey. Different types of people need to be included in the sample group.

Which sample group shows the least bias? Why?

- grade 6 teachers
- gym teachers
- teachers that teach different grades and subjects

2. Sample bias can occur when people are not selected randomly. Random sampling gives each person in the population an equal chance of being picked to take the survey.

What sampling technique shows the least bias? Why?

- select teachers from odd numbered classrooms
- select teachers in the senior wing
- survey teachers that coach sports

3. Sample bias can occur when the sample group is too small. The larger the population the more people that need to take the survey.

What sample size shows the least bias? Why?

- 2
- 5
- 10

# Appendix A: Assessment Tools

## Questionnaire Marking Sheet

Title describes the research topic.	/1
Demographic information is collected and tells about the sample group.	/1
A wide range of question types are included.	/4
The type of question used fits the information that is being collected.	/5
Options for questions are appropriate and offer a suitable range of choices.	/5
Questions achieve the purpose of the survey.	/5
A suitable number of questions are included in the survey.	/1
Order of questions is logical.	/1
Important questions are set to "required".	/1
Spelling and grammar are correct.	/1

/25

# Questionnaire Presentation Rubric

	Poor   Level 1	Fair   Level 2	Good   Level 3	Excellent   Level 4
Research Design	<p>Incomplete description of research design.</p> <p>Missing most details: purpose, research question, sample, and sample bias.</p>	<p>Somewhat complete description of research design.</p> <p>Missing a few details: purpose, research question, sample, and/or sample bias.</p>	<p>Complete description of research design.</p> <p>All details included: purpose, research question, sample, and sample bias.</p>	<p>Complete and insightful description of research design.</p> <p>Thorough description of all details: purpose, research question, sample, and sample bias.</p>
Research Results	<p>Inaccurate description of research findings.</p> <p>Missing many details: purpose, generalization of findings, and interesting results.</p> <p>Conclusions are unclear and are not supported by evidence.</p>	<p>Somewhat accurate description of research findings.</p> <p>Missing some details: purpose, generalization of findings, and/or interesting results.</p> <p>Conclusions are weak and are not always supported by evidence.</p>	<p>Accurate description of research findings.</p> <p>All details included: purpose, generalization of findings, and interesting results.</p> <p>Conclusions are strong and are supported by evidence.</p>	<p>Accurate description of research findings.</p> <p>Thorough description of all details: purpose, generalization of findings, and interesting results.</p> <p>Conclusions are strong, supported by evidence, and show a complex level of analysis.</p>
Application of Results	<p>Limited understanding of how the results can be applied.</p> <p>Suggestions for the next step are missing or impractical.</p>	<p>Some understanding of how the results can be applied.</p> <p>Some suggestions for the next step are impractical.</p>	<p>Clear understanding of how the results can be applied.</p> <p>Suggestions for the next step are practical.</p>	<p>In-depth understanding of how the results can be applied.</p> <p>Suggestions for the next step are practical and creative.</p>
Critique of Research Design	<p>Lack suggestions for improvement.</p>	<p>Suggestions improve some of the survey.</p>	<p>Suggestions improve the survey.</p>	<p>Suggestions improve the survey and are high-quality.</p>

Comments:



# Social Media Survey

Your opinion matters! Tell us what you think.

\* Required

What grade are you in at school? \*

Which forms of social media do you use? \*

Facebook

Twitter

Instagram

None

Other:

Rate how often you use social media. \*

1 2 3 4

never     all the time

What do you like to view the most on social media? \*

news

photos

videos

nothing - I don't use social media

Should the school post events or reminders using social media? Why or why not? \*

Submit

Never submit passwords through Google Forms.

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