

Reasons Logically

This task assesses your ability to **reason logically**. You will show your best work when you:

- *Read the task completely before starting.*
- *Show and clearly explain your thinking.*
- *Double check your estimate for reasonableness.*
- *Review the reflections section after completing the task.*



Reach for the Gold! It would be very difficult to count all of the people in the picture above. Identify a possible strategy to obtain a reasonable estimate of the number of people in the picture without counting each person.

Reasons Logically: Reach for the Gold! continued...

Use your strategy to estimate the number of people in the picture. Show and label your work.

Explain why your strategy provides a reasonable estimate of the total number of people without actually counting each person.

Reflections

My response is good because I ...

- identified a strategy to obtain an estimate for the number of people in the picture;
- used my strategy to estimate the number of people;
- explained why my strategy was reasonable;
- showed my work and was clear and complete.

2001 Math Power Scoring Guide: Reach for the Gold • Reasons Logically • Grade 9

	Criteria	4 Points <i>very fine work</i>	3 Points <i>fully acceptable work</i>	2 Points <i>partially acceptable</i>	1 Point <i>response attempted</i>	0 Points <i>none or insufficient</i>
Analyzes	<ul style="list-style-type: none"> Does the student identify an effective strategy to estimate the number of people in the picture? 	<ul style="list-style-type: none"> Identifies an effective strategy that uses a grid and an area model or sampling (e.g., counts the number of people in a section, then multiplies by the number of sections); AND 	<ul style="list-style-type: none"> Identifies an effective strategy that uses a grid or area model (e.g., counts the number of people in one row and multiplies by the number of rows); AND 	<ul style="list-style-type: none"> Identifies a strategy that uses a grid or area model; AND 	<ul style="list-style-type: none"> Identifies a strategy based on random guessing, guess and check, or counting every person or strategy is flawed (e.g., uses length/width units such as feet to determine solution); AND 	<ul style="list-style-type: none"> No strategy or random guessing with no support; OR
Supports	<ul style="list-style-type: none"> Does the explanation support the identified strategy? 	<ul style="list-style-type: none"> Explanation and substantiated numbers (no guesses) or formulas completely support the identified strategy and account for uneven distribution of the crowd and the people on the field and if a grid is used, clearly shows or describes all sections; AND 	<ul style="list-style-type: none"> Explanation and substantiated numbers (no guesses) or formulas support the identified strategy but may lack details and if a grid is used, clearly shows or describes all sections; AND 	<ul style="list-style-type: none"> Computations use one or more unsubstantiated numbers (for example, "guesses" the number of people in a section, then multiplies by number of sections) or response includes a computation error or explanation supports flawed estimate or explanation lacks clarity; AND 	<ul style="list-style-type: none"> Explanation supports the application of guessing, guess and check, or counting every person or explanation supports a flawed strategy; AND 	<ul style="list-style-type: none"> No explanation or explanation does not support any strategy; OR
Results	<ul style="list-style-type: none"> Does the student identify a reasonable estimate? 	<ul style="list-style-type: none"> Estimate is between 600 and 800. 	<ul style="list-style-type: none"> Estimate is between 400 and 1000. 	<ul style="list-style-type: none"> Estimate may be less than 400 or greater than 1000. 	<ul style="list-style-type: none"> Estimate is based on random guessing, guess and check, or counting every person or estimate is the result of a flawed strategy. 	<ul style="list-style-type: none"> Estimate is based on random guessing with no support or no estimate given.