Sample quiz problems of each of the types mentioned in the practice list.

Note that the quiz will be **much** shorter than this (perhaps 1/3 the length of this list of problems).

**Tell what CGI type a particular problem is**

Sample problem: Tell what CGI type each of these problems is:

|  |  |
| --- | --- |
| 1. Michelle had 6 marbles. When she cleaned her room, she found some more marbles, and then she had 9 marbles. How many marbles did she find? | 2. Nora has 13 markers. Ethan has 8 fewer markers than Nora. How many markers does Ethan have? |
| 3. Paula had 4 marbles. When she cleaned her room, she found 5 more marbles. How many marbles does she have now? | 4. Sandy has 2 red hats. She has 2 fewer red hats than blue hats. How many blue hats does she have? |
| 5. Ellen had 11 butterfly stickers. She gave some butterfly stickers to Lisa. Now she has 8 butterfly stickers left. How many butterfly stickers did she give to Lisa? | 6. There are 5 sweet crackers in the lunch box, and 10 salty crackers in the lunch box. How many crackers are in the lunch box? |
| 7. Yesterday Zach built some block towers. Today, he built 3 more block towers. In all, he built 11 block towers. How many block towers did he build yesterday? | 8. Zach had some dinosaurs. He gave 2 dinosaurs to Seth. Now he has 4 left. How many dinosaurs did Zach have to begin with? |
| 9. Todd has 5 stuffed toy animals and 9 hard plastic toy animals. How many more hard plastic toy animals than stuffed toy animals does Todd have? | 10. Zach has 6 GI Joes. He has 2 more GI Joes than Sam. How many GI Joes does Sam have? |
| 11. There are 19 bouncy balls in the toy box. 10 of the bouncy balls are green and the rest are blue. How many of the bouncy balls are blue? | 12. David caught 1 fish. How many more does he have to catch to have 3 fish? |

**Write a word problem of a given CGI type**

Sample problems: 13. Write a JRU word problem. 14. Write a CQU word problem.

**Tell which of two CGI types is the more difficult for children to understand/figure out**

Sample problems: 15. Which is more difficult: PPW-WU or SRU

16. Which is more difficult: CQU or CRU

17. Which is more difficult JCU or JSU

18. Which is more difficult CDU or SSU

**Describe how to solve problems of each of these types by direct modeling:**

Sample problems: 19. Explain how to model a JRU problem such as: Ethan had 3 robots. For his birthday, he got 5 more robots. How many robots does he have now?

20. Explain the difference in the associated strategies for direct modeling SRU, JCU and CDU problems. For example:

SRU (separating from): Nathan had 5 balloons. 2 of his balloons popped. How many balloons did he have left?

JCU (joining to): Ralph made 2 paper airplanes. How many more does he have to make to have 5 paper airplanes?

CDU (matching): John had 2 video games. Henry had 5 video games. How many more video games did Henry have than John?

**Describe how to solve problems of each of these types by using the associated counting strategy:**

21. Describe how to solve this JRU problem by counting on: Ethan had 3 robots. For his birthday, he got 5 more robots. How many robots does he have now?

22. Describe how to solve this JCU problem by counting on to: Ralph made 2 paper airplanes. How many more does he have to make to have 5 paper airplanes?

23. Describe how to solve this SRU problem by counting back: Nathan had 5 balloons. 2 of his balloons popped. How many balloons did he have left?

**Draw a labelled bar diagram for a word problem of any of the CGI types, and write the associated addition and subtraction number sentence(s)** (note: a missing whole problem will typically have only one number sentence (addition), but a missing part problem should have two associated equations: a subtraction equation and a missing number addition equation).

Sample problems: draw labelled bar diagrams for each problem, and write the associated equation (if missing whole) or equations (if missing part).

|  |  |
| --- | --- |
| 24. Michelle had 6 marbles. When she cleaned her room, she found some more marbles, and then she had 9 marbles. How many marbles did she find? | 25. Nora has 13 markers. Ethan has 8 fewer markers than Nora. How many markers does Ethan have? |
| 26. Paula had 4 marbles. When she cleaned her room, she found 5 more marbles. How many marbles does she have now? | 27. Sandy has 2 red hats. She has 2 fewer red hats than blue hats. How many blue hats does she have? |
| 28. Ellen had 11 butterfly stickers. She gave some butterfly stickers to Lisa. Now she has 8 butterfly stickers left. How many butterfly stickers did she give to Lisa? | 29. There are 5 sweet crackers in the lunch box, and 10 salty crackers in the lunch box. How many crackers are in the lunch box? |
| 30. Yesterday Zach built some block towers. Today, he built 3 more block towers. In all, he built 11 block towers. How many block towers did he build yesterday? | 31. Zach had some dinosaurs. He gave 2 dinosaurs to Seth. Now he has 4 left. How many dinosaurs did Zach have to begin with? |
| 32. Todd has 5 stuffed toy animals and 9 hard plastic toy animals. How many more hard plastic toy animals than stuffed toy animals does Todd have? | 33. Zach has 6 GI Joes. He has 2 more GI Joes than Sam. How many GI Joes does Sam have? |
| 34. There are 19 bouncy balls in the toy box. 10 of the bouncy balls are green and the rest are blue. How many of the bouncy balls are blue? | 35. David caught 1 fish. How many more does he have to catch to have 3 fish? |

**For any subtraction problem, make a bar diagram, and write the associated missing number addition problem. Some more bar diagram examples**

Sample problem: 36. Draw a bar diagram and write the associated equations for 13-8=?

**Describe how to solve a near doubles problem by using a convenient double fact (use 10-frames and equations)**

Sample: 37. Describe how to solve a 7+9 by using a convenient double fact using 10-frames and equations.

**Describe how to solve an appropriate addition problem by the make 10 strategy (use 10-frames, number lines and equations)**

Sample: 38. Describe how to solve 6+9 by the make 10 strategy using 10-frames, number lines and equations.

**For an appropriate subtraction problem, show add up using 10 to solve it. (use number lines and equations)**

Sample: 39. For 13-9, show add up using 10 to solve it using number lines and equations.

**For a 2-digit addition problem, show how to solve it using the strategies from the homework: Add on using multiples of 10 as bridge numbers on an open number line**

Sample: 40. a. Show how to solve 28+36 by adding on, using multiples of 10 as bridge numbers on an open number line.

b. Show how to solve 28+36 by adding in place values and combining

c. Show how to solve 28+36 by adding the highest place values and compensating

**For a 2-digit subtraction problem, show how to solve it using the strategies from the homework: Add up using multiples of 10 as bridge numbers on an open number line**

Sample: 41. a. Show how to solve 63 – 29 by adding up using multiples of 10 as bridge numbers on an open number line.

b. Show how to solve 63-29 using the negative numbers algorithm

c. Show how to solve 63 – 29 by subtracting the highest place values and compensating.