SIGMABUDGIE · GRADE 2

Equal Groups & Halves

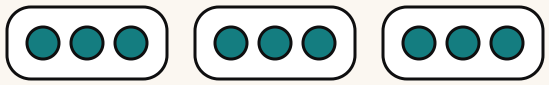
A gentle walkthrough & a 24-question exam

Part 1 walks through equal groups, doubles, sharing, and halves from the very beginning, with drawings. Part 2 is a 24-question exam that starts easy and slowly builds to harder, ISEE-style reasoning questions. Work through the lesson together first, then let your child try the exam. The answer key at the back explains every question.

1 · Groups that are the same

3 baskets with 3 pencils in each. The groups are **equal**: every basket has the same number.

To count them all, add the same number again and again: **3 + 3 + 3 = 9**.



3 groups of 3: 3 + 3 + 3 = 9

2 · "Groups of"

4 boxes with 4 flowers in each is "4 groups of 4." That is 4 + 4 + 4 + 4 = **16**.

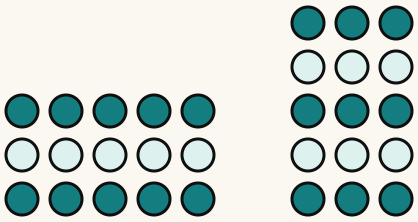
Later you will write this as 4 × 4. For now, "groups of" and adding again and again is all you need.

4 groups of 4 = 16

3 · Arrays: neat rows

Line the dots up in rows. 3 rows with 5 in each row is an **array**. Count a row (5), then add: 5 + 5 + 5 = **15**.

Turn it: 5 rows of 3 is 3 + 3 + 3 + 3 + 3 = 15. Same dots, same answer.

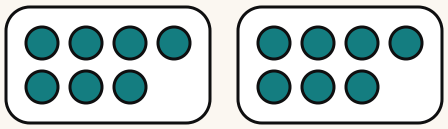


3 rows of 5 = 15 5 rows of 3 = 15

4 · Doubles

Double means two groups of the same. Double 7 is 7 + 7 = **14**. Double 14 is 14 + 14 = **28**.

To double a bigger number, double the tens and double the ones: double 14 = 20 + 8 = 28.

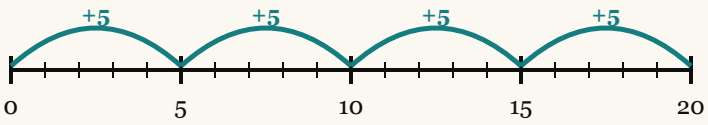


double 7 = 14

5 · Skip count to count groups

Groups of 2: count by 2s. Groups of 5: count by 5s. Groups of 10: count by 10s.

4 hands have 5 fingers each: 5, 10, 15, **20** fingers. 4 jumps of 5 on the number line.

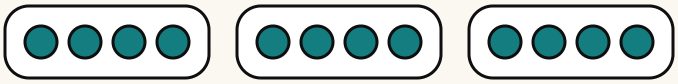


5, 10, 15, 20

6 · Sharing fairly

12 cookies shared by 3 kids. Deal them out one at a time, like cards, until they are gone. Each kid gets **4**.

A fair share means everyone gets the **same**. 12 shared by 3 is 4 each.

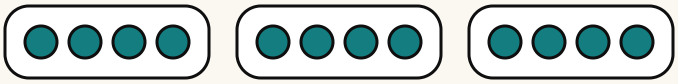


12 shared by 3 = 4 each

7 · How many groups?

12 cookies, 4 in each bag. How many bags? Make groups of 4 until the cookies run out: **3 bags**.

Same drawing, different question. "How many each?" and "how many groups?" are the two ways to share.



12 in groups of 4 = 3 groups

8 · Half of a shape

Half means 2 equal parts. Shade 1 of the 2 parts and you have one half, written **1/2**.

The two parts must be the **same size**, or they are not halves.

1/2 of the bar

1/2 of the circle

9 · Half of a number

Half of 8 sweets: split 8 into 2 equal groups. Each group has **4**. Half of 8 is 4.

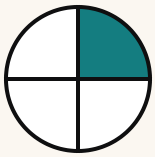
Half of 20 apples is **10**. Half of 14 is 7. Half is the opposite of double: double 4 is 8, half of 8 is 4.

half of 8 = 4

10 · Quarters

A **quarter** is 1 of 4 equal parts, written **1/4**. Cut a circle into 4 and shade 1.

A quarter of 12: split 12 into 4 equal groups, **3** in each. A quarter of 8 is 2.



1/4 of the circle

a quarter of 12 = 3

11 · Thirds

A **third** is 1 of 3 equal parts, written **1/3**. Shade 2 of the 3 parts and you have **2/3**.

The bottom number says how many equal parts. The top number says how many you shaded.

1/3

2/3

3/4

12 · When it does not share evenly

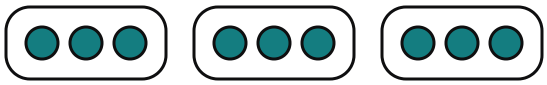
7 cookies shared by 2 kids: 3 each, and **1 left over**. Odd numbers do not split in half evenly.

Even numbers (2, 4, 6, 8…) always split into 2 equal groups. You are ready for the test! 🎉

7: 3 pairs and 1 left over

Read each drawing first, then choose the best answer. Take your time, there is no clock here. Questions start gentle and get harder toward the end. Circle your answer.

1 There are 3 baskets with 3 pencils in each. How many pencils in all?



A 6 **B** 3

C 9 **D** 12

2 What is 6 + 6 + 6 + 6?

A 24 **B** 18

C 12 **D** 30

3 What is double 7?

A 9 **B** 7

C 17 **D** 14

4 What fraction of the bar is shaded?

A 1/4 **B** 1/2

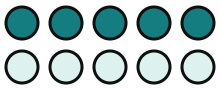
C 2/2 **D** 1/3

5 What is half of 8 sweets?

A 2 **B** 16

C 6 **D** 4

6 How many dots are in the array?



A 7

B 5

C 10

D 12

---

7 There are 4 boxes with 4 flowers in each. How many flowers in all?

A 16

B 8

C 12

D 20

---

8 What is double 14?

A 18

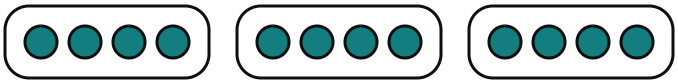
B 28

C 24

D 16

---

9 12 cookies are shared fairly by 3 kids. How many does each kid get?



A 3

B 9

C 4

D 36

---

10 What is half of 20 apples?

A 5

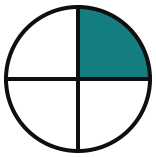
B 40

C 15

D 10

---

11 What fraction of the circle is shaded?



A 1/2

B 1/4

C 1/3

D 3/4

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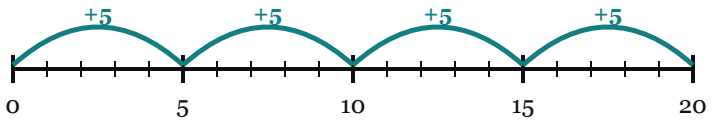
12 4 hands have 5 fingers each. How many fingers in all?



A 20

B 9

C 15

D 25

---

13 What is a quarter (1/4) of 12?

A 4

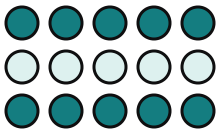
B 6

C 8

D 3

---

14 Which number sentence matches the array?



A 3 + 5 = 8

B 3 + 3 + 3 = 9

C 5 + 5 + 5 = 15

D 5 + 5 = 10

---

15 12 cookies are put into bags with 4 in each bag. How many bags are there?

A 3

B 4

C 8

D 16

---

16 What fraction of the bar is shaded?

A 1/3

B 2/3

C 2/2

D 1/2

---

17 What is a quarter (1/4) of 8?

A 4

B 2

C 1

D 32

---

18 There are 5 bags with 10 marbles in each. How many marbles in all?

A 15

B 40

C 55

D 50

---

19 7 cookies are shared by 2 kids as fairly as possible. How many does each kid get, and how many are left over?

A 4 each, 0 left over

B 3 each, 0 left over

C 3 each, 1 left over

D 2 each, 3 left over

---

20 What fraction of the bar is shaded?

A 3/4

B 1/4

C 3/3

D 4/3

---

21 Which number can be split into 2 equal groups with none left over?

A 18

B 15

C 11

D 9

---

22 Mia has 3 packs of 6 stickers. Ben has 2 packs of 8 stickers. Who has more stickers?

A Ben, with 16

B They have the same

C Ben, with 18

D Mia, with 18

---

23 Half of a number is 9. What is the number?

A 4

B 18

C 9

D 19

---

24 20 stickers are shared fairly by 4 kids. Then each kid gets 2 more. How many does each kid have now?

A 5

B 10

C 7

D 22

ANSWER KEY & EXPLANATIONS

1	**C**	3 + 3 + 3 = 9.
2	**A**	4 groups of 6: 6, 12, 18, 24.
3	**D**	Double means 7 + 7 = 14.
4	**B**	2 equal parts, 1 shaded: one half.
5	**D**	Split 8 into 2 equal groups: 4 and 4.
6	**C**	2 rows of 5: 5 + 5 = 10.
7	**A**	4 + 4 + 4 + 4 = 16.
8	**B**	Double 10 is 20, double 4 is 8: 20 + 8 = 28.
9	**C**	Deal them out: 4 each.
10	**D**	10 + 10 = 20, so half of 20 is 10.
11	**B**	4 equal parts, 1 shaded: one quarter.
12	**A**	Count by 5s: 5, 10, 15, 20.
13	**D**	Split 12 into 4 equal groups: 3 in each.
14	**C**	3 rows with 5 in each row: 5 + 5 + 5 = 15.
15	**A**	Groups of 4: 4, 8, 12. That is 3 bags.
16	**B**	3 equal parts, 2 shaded: two thirds.
17	**B**	Split 8 into 4 equal groups: 2 in each.
18	**D**	Count by 10s: 10, 20, 30, 40, 50.
19	**C**	3 + 3 = 6, and 1 cookie is left over.
20	**A**	4 equal parts, 3 shaded: three quarters.
21	**A**	18 is even: 9 + 9. The others are odd.
22	**D**	Mia: 6 + 6 + 6 = 18. Ben: 8 + 8 = 16. Mia has more.
23	**B**	Half is the opposite of double. Double 9 is 18.
24	**C**	20 shared by 4 is 5 each. Then 5 + 2 = 7.