Name: _____
Date: _____ Score: ___ / 10

1. **3 × 9** = _____

2. **4 × 1** = _____

WORKSPACE:

WORKSPACE:

3. **4 × 2** = _____

4. **0 × 9** = _____

WORKSPACE:

WORKSPACE:

5. **4 × 8** = _____

6. **2 × 8** = _____

WORKSPACE:

WORKSPACE:

7. **0 × 10** = _____

8. **1 × 7** = _____

WORKSPACE:

WORKSPACE:

9. **2 × 4** = _____

10. **5 × 3** = _____

WORKSPACE:

WORKSPACE:

1. **3 × 9** = 27

1. Multiplication Fact: 3 × 9 = 27
2. Double + 1 Group Strategy: (2 × 9) + 9 = 18 + 9 = 27.
3. Repeated Addition: 9 + 9 + 9 = 27 ✅

2. **4 × 1** = 4

1. Multiplication Fact: 4 × 1 = 4
2. Identity Property: Any number multiplied by 1 equals itself (1 × 4 = 4).
3. Verification: 1 group of 4 is 4 ✅

3. **4 × 2** = 8

1. Multiplication Fact: 4 × 2 = 8
2. Doubles Strategy: Multiplying by 2 means adding the number to itself.
3. Repeated Addition: 4 + 4 = 8 ✅

4. **0 × 9** = 0

1. Multiplication Fact: 0 × 9 = 0
2. Zero Property: Any number multiplied by 0 equals 0 (9 × 0 = 0).
3. Verification: 0 groups of any size contain zero items ✅

5. **4 × 8** = 32

1. Multiplication Fact: 4 × 8 = 32
2. Double-Double Strategy: Double 8 is 16, and Double 16 is 32.
3. Group Decomposition: (2 × 8) + (2 × 8) = 16 + 16 = 32 ✅

6. **2 × 8** = 16

1. Multiplication Fact: 2 × 8 = 16
2. Doubles Strategy: Multiplying by 2 means adding the number to itself.
3. Repeated Addition: 8 + 8 = 16 ✅

7. **0 × 10** = 0

1. Multiplication Fact: 0 × 10 = 0
2. Zero Property: Any number multiplied by 0 equals 0 (10 × 0 = 0).
3. Verification: 0 groups of any size contain zero items ✅

8. **1 × 7** = 7

1. Multiplication Fact: 1 × 7 = 7
2. Identity Property: Any number multiplied by 1 equals itself (1 × 7 = 7).
3. Verification: 1 group of 7 is 7 ✅

9. **2 × 4** = 8

1. Multiplication Fact: 2 × 4 = 8
2. Doubles Strategy: Multiplying by 2 means adding the number to itself.
3. Repeated Addition: 4 + 4 = 8 ✅

10. **5 × 3** = 15

1. Multiplication Fact: 5 × 3 = 15
2. Double + 1 Group Strategy: (2 × 5) + 5 = 10 + 5 = 15.
3. Repeated Addition: 5 + 5 + 5 = 15 ✅

Name: _____
Date: _____ Score: ___ / 10

1. $(5 \times 2) \times 7 = 5 \times (___ \times 7)$

WORKSPACE:

2. $(2 \times 4) \times 3 = 2 \times (4 \times ___)$

WORKSPACE:

3. $2 \times (5 \times 5) = (___ \times 5) \times 5$

WORKSPACE:

4. $(2 \times 2) \times 9 = 2 \times (2 \times 9) = ___$

WORKSPACE:

5. $(3 \times 2) \times 8 = 3 \times (___ \times 8)$

WORKSPACE:

6. $(2 \times 4) \times 5 = 2 \times (4 \times ___)$

WORKSPACE:

7. $5 \times (2 \times 6) = (___ \times 2) \times 6$

WORKSPACE:

8. $(2 \times 3) \times 4 = 2 \times (3 \times 4) = ___$

WORKSPACE:

9. $(3 \times 3) \times 2 = 3 \times (___ \times 2)$

WORKSPACE:

10. $(5 \times 2) \times 3 = 5 \times (2 \times ___)$

WORKSPACE:

1. **(5 × 2) × 7 = 5 × (___ × 7)** Ans: 2

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (5 × 2) × 7 = 10 × 7 = 70.
3. Grouping 2 (Right First): 5 × (2 × 7) = 5 × 14 = 70.
4. Factor Matching: The missing factor is 2 ✅

2. **(2 × 4) × 3 = 2 × (4 × ___)** Ans: 3

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (2 × 4) × 3 = 8 × 3 = 24.
3. Grouping 2 (Right First): 2 × (4 × 3) = 2 × 12 = 24.
4. Factor Matching: The missing factor is 3 ✅

3. **2 × (5 × 5) = (___ × 5) × 5** Ans: 2

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (2 × 5) × 5 = 10 × 5 = 50.
3. Grouping 2 (Right First): 2 × (5 × 5) = 2 × 25 = 50.
4. Factor Matching: The missing factor is 2 ✅

4. **(2 × 2) × 9 = 2 × (2 × 9) = ___** Ans: 36

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (2 × 2) × 9 = 4 × 9 = 36.
3. Grouping 2 (Right First): 2 × (2 × 9) = 2 × 18 = 36.
4. Final Calculation: Both groupings yield the identical product of 36 ✅

5. **(3 × 2) × 8 = 3 × (___ × 8)** Ans: 2

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (3 × 2) × 8 = 6 × 8 = 48.
3. Grouping 2 (Right First): 3 × (2 × 8) = 3 × 16 = 48.
4. Factor Matching: The missing factor is 2 ✅

6. **(2 × 4) × 5 = 2 × (4 × ___)** Ans: 5

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (2 × 4) × 5 = 8 × 5 = 40.
3. Grouping 2 (Right First): 2 × (4 × 5) = 2 × 20 = 40.
4. Factor Matching: The missing factor is 5 ✅

7. **5 × (2 × 6) = (___ × 2) × 6** Ans: 5

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (5 × 2) × 6 = 10 × 6 = 60.
3. Grouping 2 (Right First): 5 × (2 × 6) = 5 × 12 = 60.
4. Factor Matching: The missing factor is 5 ✅

8. **(2 × 3) × 4 = 2 × (3 × 4) = ___** Ans: 24

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (2 × 3) × 4 = 6 × 4 = 24.
3. Grouping 2 (Right First): 2 × (3 × 4) = 2 × 12 = 24.
4. Final Calculation: Both groupings yield the identical product of 24 ✅

9. **(3 × 3) × 2 = 3 × (___ × 2)** Ans: 3

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (3 × 3) × 2 = 9 × 2 = 18.
3. Grouping 2 (Right First): 3 × (3 × 2) = 3 × 6 = 18.
4. Factor Matching: The missing factor is 3 ✅

10. **(5 × 2) × 3 = 5 × (2 × ___)** Ans: 3

1. Associative Property Law: (a × b) × c = a × (b × c). Changing grouping does not change the product.
2. Grouping 1 (Left First): (5 × 2) × 3 = 10 × 3 = 30.
3. Grouping 2 (Right First): 5 × (2 × 3) = 5 × 6 = 30.
4. Factor Matching: The missing factor is 3 ✅

PanMaths.com

Equivalent Fractions with Area Models Worksheets

Name: _____

Date: _____ Score: ___ / 10

1. SCALE × 2

Find the missing numerator to make fractions equal:



$$\frac{4}{4} = \frac{\square}{8}$$

2. SCALE × 3

Find the missing numerator to make fractions equal:



$$\frac{1}{2} = \frac{\square}{6}$$

3. SCALE × 2

Find the missing numerator to make fractions equal:



$$\frac{3}{3} = \frac{\square}{6}$$

4. SCALE × 2

Find the missing numerator to make fractions equal:



$$\frac{2}{2} = \frac{\square}{4}$$

5. SCALE × 2

Find the missing numerator to make fractions equal:



$$\frac{2}{3} = \frac{\square}{6}$$

6. SCALE × 4

Find the missing numerator to make fractions equal:



$$\frac{1}{2} = \frac{\square}{8}$$

7. SCALE × 2

Find the missing numerator to make fractions equal:



$$\frac{1}{2} = \frac{\square}{4}$$

8. SCALE × 2

Find the missing numerator to make fractions equal:



$$\frac{3}{4} = \frac{\square}{8}$$

9. SCALE × 2

Find the missing numerator to make fractions equal:



$$\frac{1}{4} = \frac{\square}{8}$$

10. SCALE × 2

Find the missing numerator to make fractions equal:



$$\frac{2}{4} = \frac{\square}{8}$$

1. SCALE × 2

Find the missing numerator to make fractions equal:



$\frac{4}{4} = \frac{8}{8}$ ✓ 4/4 = 8/8

Multiply top & bottom by 2: 4 × 2 = 8 → 4/4 = 8/8 ✓

2. SCALE × 3

Find the missing numerator to make fractions equal:



$\frac{1}{2} = \frac{3}{6}$ ✓ 1/2 = 3/6

Multiply top & bottom by 3: 1 × 3 = 3 → 1/2 = 3/6 ✓

3. SCALE × 2

Find the missing numerator to make fractions equal:



$\frac{3}{3} = \frac{6}{6}$ ✓ 3/3 = 6/6

Multiply top & bottom by 2: 3 × 2 = 6 → 3/3 = 6/6 ✓

4. SCALE × 2

Find the missing numerator to make fractions equal:



$\frac{2}{2} = \frac{4}{4}$ ✓ 2/2 = 4/4

Multiply top & bottom by 2: 2 × 2 = 4 → 2/2 = 4/4 ✓

5. SCALE × 2

Find the missing numerator to make fractions equal:



$\frac{2}{3} = \frac{4}{6}$ ✓ 2/3 = 4/6

Multiply top & bottom by 2: 2 × 2 = 4 → 2/3 = 4/6 ✓

6. SCALE × 4

Find the missing numerator to make fractions equal:



$\frac{1}{2} = \frac{4}{8}$ ✓ 1/2 = 4/8

Multiply top & bottom by 4: 1 × 4 = 4 → 1/2 = 4/8 ✓

7. SCALE × 2

Find the missing numerator to make fractions equal:



$\frac{1}{2} = \frac{2}{4}$ ✓ 1/2 = 2/4

Multiply top & bottom by 2: 1 × 2 = 2 → 1/2 = 2/4 ✓

8. SCALE × 2

Find the missing numerator to make fractions equal:



$\frac{3}{4} = \frac{6}{8}$ ✓ 3/4 = 6/8

Multiply top & bottom by 2: 3 × 2 = 6 → 3/4 = 6/8 ✓

9. SCALE × 2

Find the missing numerator to make fractions equal:



10. SCALE × 2

Find the missing numerator to make fractions equal:



Name: _____
Date: _____ Score: ___ / 10

1. RECTANGLE

Find the area of this shape:



Area = _____ in²

2. RECTANGLE

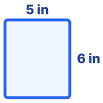
Find the area of this shape:



Area = _____ ft²

3. RECTANGLE

Find the area of this shape:



Area = _____ in²

4. RECTANGLE

Find the area of this shape:



Area = _____ in²

5. RECTANGLE

Find the area of this shape:



Area = _____ m²

6. RECTANGLE

Find the area of this shape:



Area = _____ in²

7. RECTANGLE

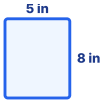
Find the area of this shape:



Area = _____ m²

8. RECTANGLE

Find the area of this shape:



Area = _____ in²

9. RECTANGLE

Find the area of this shape:



Area = _____ ft²

10. RECTANGLE

Find the area of this shape:



Area = _____ in²

1. RECTANGLE

Find the area of this shape:



Area = **84 in²**

12 × 7 = 84 in² ✓

2. RECTANGLE

Find the area of this shape:

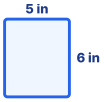


Area = **72 ft²**

12 × 6 = 72 ft² ✓

3. RECTANGLE

Find the area of this shape:



Area = **30 in²**

5 × 6 = 30 in² ✓

4. RECTANGLE

Find the area of this shape:



Area = **36 in²**

9 × 4 = 36 in² ✓

5. RECTANGLE

Find the area of this shape:



Area = **77 m²**

11 × 7 = 77 m² ✓

6. RECTANGLE

Find the area of this shape:



Area = **48 in²**

8 × 6 = 48 in² ✓

7. RECTANGLE

Find the area of this shape:

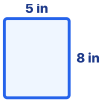


Area = **28 m²**

7 × 4 = 28 m² ✓

8. RECTANGLE

Find the area of this shape:



Area = **40 in²**

5 × 8 = 40 in² ✓

9. RECTANGLE

Find the area of this shape:



Area = **40 ft²**

10 × 4 = 40 ft² ✓

10. RECTANGLE

Find the area of this shape:



Area = **72 in²**

9 × 8 = 72 in² ✓