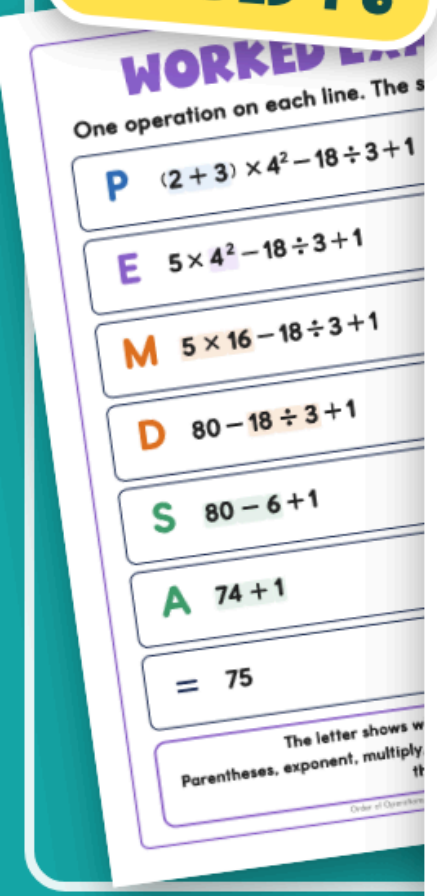
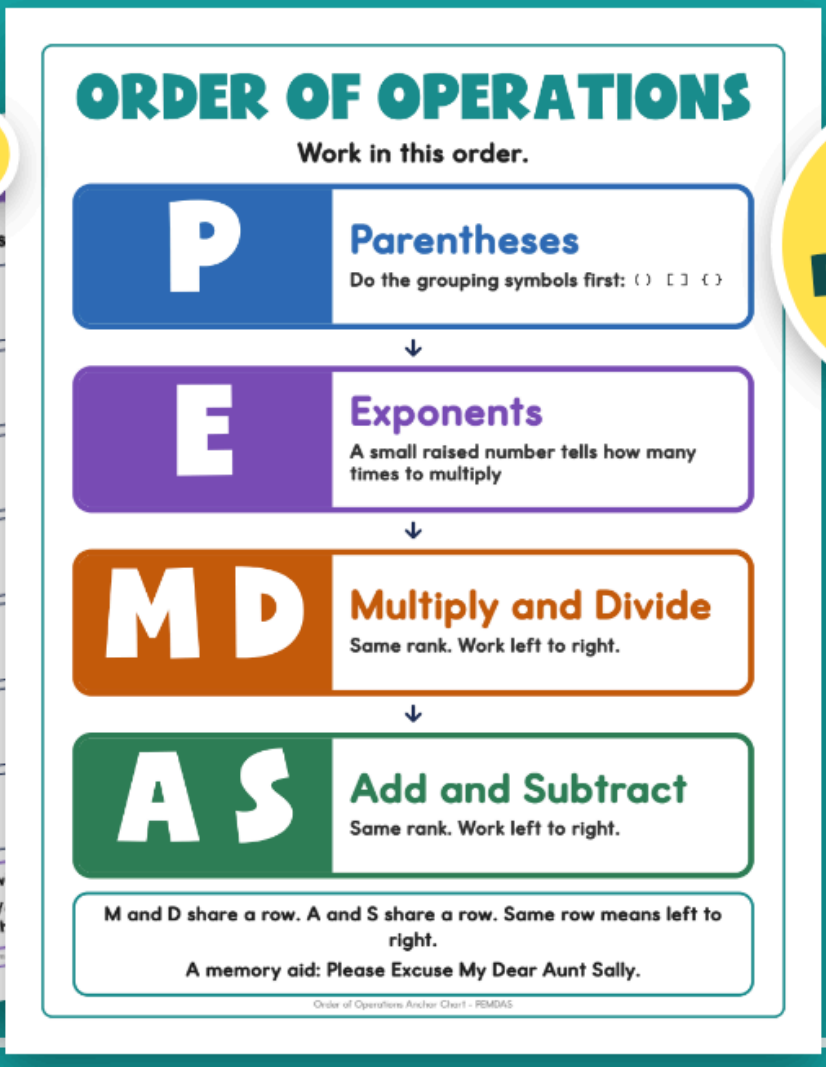
ORDER OF OPERATIONS ANCHOR CHARTS

GRADES 4-6





5 POSTERS

Bright Path Sped

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This is a fillable PDF

- Open it in a PDF reader (Adobe Acrobat Reader, Preview, or your browser), click into a line or a box, type, and Save As.
- The name lines, the answer blanks on the practice pages, the family note and every notes area are type-in fields. The posters and the notebook charts are print pages. You can also print any page and write by hand.
- It works offline. No account, no subscription, no internet connection needed after you download it.

Print at 100 percent

Turn off fit to page and shrink to fit so the cut pieces keep their size. Every page is readable in black and white. Posters look best on cardstock; the charts children cut are fine on copy paper.

Need help?

If a field will not behave or a page will not print the way you expect, use Ask a Question on the product page before leaving a review. Every question is read, and a fix to the file ships as an update.

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PREVIEW

How to Teach It: Five Short Routines

Each one takes a few minutes. Change only one operation on each line.

1. Read the order

- Show the PEMDAS poster (page 5). Read the four rows aloud, top to bottom.
- Ask: "Which rows have the same rank?"

2. Follow one example

- Show page 6. Cover every row except the first, then uncover one row at a time.
- Point to the shaded part: that is the only part that changes on the next line.

3. Look for grouping symbols

- Show page 7. Children point to every grouping symbol in a new problem before they start.
- Say: "Work from the inside out."

4. Skip or use the E

- Show page 8. Children look for a small raised number.
- If your class has not met exponents, use the no-exponent practice (page 17) and skip the E step.

5. Left to right, then send it home

- Show page 9. Children cut the notebook charts (page 15 or 16) and glue one in.
- Send the note home (page 28) so families practice too.

Notes on your day

PREVIEW

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WORKED EXAMPLE

One operation on each line. The shaded part is next.

P	$(2+3)\times 4^2-18\div 3+1$	Inside the parentheses: 2 plus 3 is 5.
E	$5\times 4^2-18\div 3+1$	Exponent: 4 squared is 16.
M	$5\times 16-18\div 3+1$	Multiply: 5 times 16 is 80.
D	$80-18\div 3+1$	Divide: 18 divided by 3 is 6.
S	$80-6+1$	Subtract: 80 minus 6 is 74.
A	$74+1$	Add: 74 plus 1 is 75.
=	75	Answer: 75.

The letter shows which step comes next.

Parentheses, exponent, multiply, divide, then subtract and add from the left.

PREVIEW

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DOES IT NEED EXPONENTS?

Look for a small raised number.

Yes: I see a small raised number

Do the E step.

$3^2 + 4$
$= 9 + 4$ E: 3 squared is 9.
$= 13$ A: 9 plus 4 is 13.

$2 \times 3^2 - 4$
$= 2 \times 9 - 4$ E: 3 squared is 9.
$= 18 - 4$ M: 2 times 9 is 18.
$= 14$ S: 18 minus 4 is 14.

$10 - 2^3$
$= 10 - 8$ E: 2 cubed is 8.
$= 2$ S: 10 minus 8 is 2.

No: I do not

Skip the E. Go from P to M and D.

$6 + 2 \times 5$
$= 6 + 10$ M: 2 times 5 is 10.
$= 16$ A: 6 plus 10 is 16.

$18 \div 3 + 2$
$= 6 + 2$ D: 18 divided by 3 is 6.
$= 8$ A: 6 plus 2 is 8.

$5 + 4 \times 2$
$= 5 + 8$ M: 4 times 2 is 8.
$= 13$ A: 5 plus 8 is 13.

PREVIEW

What the small number means

$3^2 = 3 \times 3 = 9$

✗ Not 3 times 2, which is 6.

A small raised number means: multiply the big number by itself that many times.

No small raised number means there is no exponent step.

WORKED EXAMPLE

One operation on each line. The shaded part is next.

P	$(2+3)\times 4^2-18\div 3+1$	Inside the parentheses: 2 plus 3 is 5.
E	$5\times 4^2-18\div 3+1$	Exponent: 4 squared is 16.
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D	$80-18\div 3+1$	Divide: 18 divided by 3 is 6.
S	$80-6+1$	Subtract: 80 minus 6 is 74.
A	$74+1$	Add: 74 plus 1 is 75.
=	75	Answer: 75.

The letter shows which step comes next.

Parentheses, exponent, multiply, divide, then subtract and add from the left.

PREVIEW

Preview · Bright Path Sped

DOES IT NEED EXPONENTS?

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What the small number means

$3^2 = 3 \times 3 = 9$

✕ Not 3 times 2, which is 6.

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PREVIEW

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Cut the charts apart. Glue one in your notebook.

PEMDAS

P Parentheses (grouping symbols)
E Exponents
M D Multiply and Divide, left to right
A S Add and Subtract, left to right

Glue in your notebook.

Four Steps

1. Do the grouping symbols.
2. Do the exponents.
3. Multiply and divide, left to right.
4. Add and subtract, left to right.

Glue in your notebook.

Grouping Symbols

Work from the inside out.

( ) [ ] { }

$(4+2)\times 3 = 6\times 3 = 18$

Glue in your notebook.

Exponents

A small raised number says how many times to multiply.

$3^2 = 3\times 3 = 9$

No small number? Skip this step.

Glue in your notebook.

Left to Right

Same rank: do the left one first.

$12\div 3\times 2 = 4\times 2 = 8$

$15-6+4 = 9+4 = 13$

Glue in your notebook.

Check It

Did I do the grouping symbols first?
Did I go left to right?
Did I change one operation on each line?
Does my last line show one number?

Glue in your notebook.

PREVIEW

Preview - Bright Path Sped

My name _____

Solve. Write the answer.

Multiply and divide first. Then add and subtract. Go left to right.

$6 + 4 \times 3 =$ _____

$20 - 12 \div 4 =$ _____

$5 \times 3 + 8 \div 2 =$ _____

$18 \div 3 \times 2 =$ _____

$30 - 4 \times 5 + 2 =$ _____

$9 + 6 \div 3 \times 4 =$ _____

PREVIEW

Preview - Bright Path Sped

My name _____

Do the grouping symbols first. Write the answer.

Work from the inside out.

$(6+4) \times 3 =$ _____

$(20-12) \div 4 =$ _____

$5 \times (3+8) - 10 =$ _____

$[2+(9-5)] \times 3 =$ _____

$\{(8-2) \times 3+6\} \div 4 =$ _____

$36 \div (3 \times 2) + 4 =$ _____

PREVIEW

Preview : Bright Path Sped

My name _____

Write every line. Change one operation.

The last line is one number.

$6 + 3 \times 4 - 2$

= _____

= _____

= _____

$(9 - 5) \times 2 + 7$

= _____

= _____

= _____

$2 \times 3^2 - 4$

= _____

= _____

= _____

$24 \div 4 + 5 \times 2$

= _____

= _____

= _____

PREVIEW

Filled Example: One Child's Page

The page is Grouping Symbols (page 18). Jordan (invented child). The child, the teacher and every answer on this page are invented.

Problem	Right answer	Jordan wrote	Right?
$(6+4)\times 3$	30	30	yes
$(20-12)\div 4$	2	2	yes
$5\times(3+8)-10$	45	13	no
$[2+(9-5)]\times 3$	18	18	yes
$\{(8-2)\times 3+6\}\div 4$	6	6	yes
$36\div(3\times 2)+4$	10	28	no

Reading the page

4 of 6 were right. The first wrong one is item 3. Jordan wrote 13, which is what you get by skipping the parentheses and working left to right. Inside the parentheses, 3 plus 8 is 11, so the answer is 45.

The second wrong one is item 6. Jordan wrote 28, the same slip: the parentheses were skipped. Inside them, 3 times 2 is 6, so the answer is 10.

What the teacher did next

The teacher had Jordan circle every grouping symbol before starting, then rewrite item 3 one line at a time, changing only the part inside the parentheses on the first line. Then Jordan checked item 6 the same way.

What this example is not

One invented child's page. It sets no typical score, says nothing about any real child and predicts nothing.

My notes on the page

PREVIEW

Key: Exponents and Which Step First

Accept the letter of the step, even if a child words the reason differently.

Exponents (page 19)

Item	Problem	Answer
1	$3^2 + 5$	14
2	$4 + 2^3$	12
3	$10 - 2^2 \times 2$	2
4	$(7 - 3) \times 2^2$	16
5	$5^2 - 12 \div 3$	21
6	$2 \times 3^2 + 6$	24

Which step first (page 20)

Item	Problem	First step
1	$8 + 6 \div 2$	D: 6 divided by 2 is 3
2	$(9 - 4) \times 3$	P: 9 minus 4 is 5
3	5×2^2	E: 2 squared is 4
4	$20 - 6 + 3$	S: 20 minus 6 is 14
5	$4 \times 3 \div 2$	M: 4 times 3 is 12
6	$12 \div (2 + 4)$	P: 2 plus 4 is 6

My notes on the answers

PREVIEW

Class Roll: Who Can Use the Order

Put a check in the box for each skill a child can do on his or her own.

Your class

Child	Does P first	Uses exponents	Multiply and divide	Add and subtract	Nested groups	Finds mistakes

PREVIEW

Next steps

- Skills with many blanks: show the worked example again, then work a few problems together.
- Keep the roll in the binder with the keys.

My notes on the class

A Note Home: The Order of Operations

One page to send home when you start the posters.

Date _____ Class _____ Teacher _____

Dear families,

This week we are learning the order to work a math problem that has more than one operation. We do the grouping symbols first, then exponents, then multiply and divide from the left, then add and subtract from the left.

$$6 + 4 \times 3 = 6 + 12 = 18$$

This week we are practicing

_____

_____

You can try this at home

Ask your child to show you the PEMDAS poster or notebook chart and explain one example. Ask: "Which step goes first? How do you know?"

_____

_____

_____

A note from me (your words)

_____

_____

_____

_____

Thank you, (teacher) _____ Family signature, if your school asks for one _____

PREVIEW