CURRICULUM RESOURCE SERIES

Mathematics Volume 3 Parent Guide

TEACH / REVIEW / RETEACH

Original teaching resources. Select instruction by demonstrated skills, not age. This document is not an independently certified full-year grade-level curriculum.

Mathematics Volume 3 | Parent Teaching Guide and Answers

Companion to Lessons 21-30 . Use the answer key only after learners complete the tasks independently. Early Advanced, Developing, and Extended are skill paths available at any age. Where a task involves a drawing, evaluate the reasoning and model rather than expecting one image.

Lesson 21: Factors and primes

- Early Advanced: 12: groups of 2=6 rows, 3=4, 4=3; even numbers 2,4,6,8,10; 7+5=12 even; 6 rows can be 1-6, 2-3.

- Developing: 36 factors 1,2,3,4,6,9,12,18,36; primes 29 and41; composites 35 and49; GCF(18,30)=6; LCM(6,8)=24.

- Extended: 420=2^2x3x5x7; GCF(72,90)=18; LCM=360; claim false: 2+3=5, odd; 1 has only one positive factor.

Lesson 22: Fraction operators

- Early Advanced: 3/4 is greater than 1/2; eight shared between two gives 4; 1/2 greater than 1/4 with same whole.

- Developing: 5/6 of42=35; 3/4+1/8=7/8; 7/10-2/5=3/10; remaining ribbon=7/3 m.

- Extended: 5/8/3/4=5/6; x=17/12; 2/3-3.5=7/3 cups; 1/1/2=2 illustrates principle.

Lesson 23: Decimals

- Early Advanced: Ten dimes make $1; 75 cents greater than 50 cents; 6+8=14,12-5=7,9+7=16;12 is one ten two ones.

- Developing: 7.85+4.70=12.55;12.6-8.37=4.23;2.4-3=7.2;19.8+30.2=50.

- Extended: 3.75x.24=.9;18.72/.6=31.2;price 48 to54 is12.5%; .75x.2=.15, not 7.5.

Lesson 24: Ratios

- Early Advanced: Groups 2 red to 1 blue; sequence 10,12;3-4=12; 2+2+2=6.

- Developing: Cost $24; x=35;18:30=3:5;12/3=4 miles/hr.

- Extended: Rate=3 for all rows, yes proportional; constant=2.5;4.5cm means2.25km; fixed fee breaks ratio.

Lesson 25: Equations

- Early Advanced: 3+6=9;12-5=7; sample 6+4 and9+1; 5+4=6+3 true.

- Developing: x=53;x=12;5a-2=28;4x+7=35 gives x=7.

- Extended: 3(2x-1)=4x+13 gives x=8;5(2a-3)-2(a+4)=8a-23;x/3+5=12 gives x=21; x+1=x+1 identity.

Lesson 26: Graphs

- Early Advanced: See grid, right/up language; sequences 9,11 and 16,20.

- Developing: Points as listed; y=3x+2 gives2,5,8,14;horizontal distance6; possible fare start fee plus each mile.

- Extended: Slope2; y=-2x+5; intersection (3,7); vertical line has multiple y for same x.

Lesson 27: Geometry

- Early Advanced: Correct four shapes, measurements, rectangle and triangle corners.

- Developing: Rect area65 cm^2,perimeter36 cm;triangle area56 cm^2;2.75m=275cm; angle=65 degrees.

- Extended: Box volume60 cm3;surface area94 cm^2;circle circumference25.12 cm,area50.24 cm^2; area factor4; 9^2+12^2=225 so hypotenuse15.

Lesson 28: Data

- Early Advanced: Most common blue; graph 3,5,2 with labels.

- Developing: 3,5,5,7,10 mean6 median5 mode5 range7;red probability3/5; tiny convenience sample is unrepresentative.

- Extended: 2,3,3,4,18 mean6 median3; fair unbiased sampling;3 heads=1/8; correlation is not causal proof.

Lesson 29: Percent and finance

- Early Advanced: Five pennies plus 2 nickels=15 cents; $2>$1.50; save $4; needs vs wants open-ended.

- Developing: 25% of96=24;sale $51;tax $4;balance $47.

- Extended: (282-240)/240=17.5%;120x.8-1.08=$103.68;simple interest $90; change 20% to30% is 10 percentage points but 50% relative increase.

Lesson 30: Assessment

- Early Advanced: 8+9=17,15-8=7,3-4=12,16/4=4; count 5,10,15,20,25,30,35,40; three-fourths appropriately shaded.

- Developing: 438+267=705;96/8=12;3/4+1/8=7/8;35% of80=28;area63cm^2; x=7.

- Extended: 4(x-3)=2x+10 -x=11;7/8-1/3=13/24;18% of250=45;slope2;2,4,6,8,30 mean10 median6;ratio problem varies.

Parent Scoring and Reteaching

For each concept record independently correct, guided, or not yet demonstrated. Require an explanation for at least one problem. For extended reasoning accept counterexamples and proofs consistent with mathematics. Reassess with changed quantities after reteaching. A local practice score is not a verified state-test proficiency result. Keep records private.

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