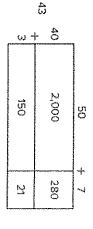
What will students Learn in This Unit?

Using Area Models and Partial Products

Your child will use area models to represent multiplication of multi-digit factors. The place value of each digit is used to find the area of the smaller rectangles, which are the partial products. Then these partial products are added to find the total product.

Example:

A clothing store is 57 feet long and 43 feet wide. What is the area of the clothing store?



Add the partial products

$$2,000 + 280 + 150 + 21 = 2,451$$

The area of the clothing store is 2,451 square feet.

Using Partial Products and an Algorithm

Your child will learn an algorithm for multiplying by using the place values of each digit to find the partial products.

× 26

13

Using an Algorithm

Your child will learn an algorithm for multiplying multi-digit numbers. They can use this process without using partial products.

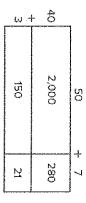
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Using Partial Products and an Algorithm

							using the place values of each digit to find the partial products.	Your child will learn an algorithm for multiplying by
	n X S	5 X 40	6 x 100	20 × 3 =	20 × 40 ≡	$20 \times 100 = 2,000$		
	Ħ	11	ii	II	H	ii		
3,718	+ 18	240	600	60	800	2,000	x 26	143

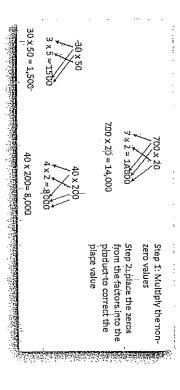
Using an Algorithm

Your child will learn an algorithm for multiplying multi-digit numbers. They can use this process without using partial products.

3,718	+ 2,860	858	X 26	143
			; (g	Reamun

Multiplication Notes:

Viultiply by multiples of TO



Multiply-using area model

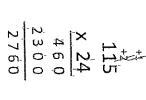
1		^
6×100 = 600	40 x 100 = 4000	100 +
6 × 20 = 120	40 x 150 =4000 40 x 25 ± <u>800</u>	20
6×7= 42	40 x 7 = 280	+ 7
120 Step 3: Fin + 42 Step 4: Add find the to		expanded form.
Step 3: Find the partial products Step 4: Add the partial products to find the total product	127 = 100 + 20 + 7 $46 = 40 + 6$ Step 2: Create your area model (3 digit by 2 digit)	expanded form.

40

Multiply using partial products

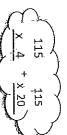
115 X 24 400 = 100 × 4 40 = 10 × 4 20 = 5 × 4 2000 = 100 × 20 200 = 10 × 20 100 = 5 × 20 2760	
Step 1: Decompose the numbers you are inultiplying Think: 115 = 100 + 10 + 5 Think 24 = 20 + 4 Step 2: Use the distributive property to find all the smaller multiplication problems Think: 115 x 4 = (100 x 4) + (10 x 4) + (5 x 4) Think: 115 x 20 = (100 x 20) + (10 x 20) + (5 x 20) Step 3: Find the partial products: Step 4: Add the partial products together to find the full product.	-

Multiply using standard algorithm



Step 1: Decompose the problem mentally into smaller problems

Step 1: Decompose both values in



Step 2: Multiply the top number by the ones place of the bottom number.

Step 3: Place a zero to represent that you are in the tens place and then multiply the top number by the tens place of the bottom number.

Step 4: Add the partial products

Lesson 5-1 · Reinforce Understanding

Estimate Products of Multi-Digit Factors

Name

Review

You can-multiply-with multiples of 10 to help when estimating products of multi-digit factors.

Estimate the product 52 \times 303.

$$50 \times 300 = 5 \times 10 \times 3 \times 100$$

$$= 5 \times 3 \times 1,000$$

$$= 15 \times 1,000$$

$$= 15,000$$

Estimate the product using rounded numbers or multiples of 10.

Estimate the product presented in the word problem.

7. The classroom library has 12 shelves. Each shelf holds 53 books. About how many books does the classroom library have in all? Show your work.

Additional Practice

Name _____

Review

You can use rounding or compatible numbers to estimate a product.

There are 329-students in a grade school. Each student donates 11 canned-items. About how many canned items-does the school collect?

$$329 \times 11 = c$$

329 rounds_to 330:_

11 rounds to 10.

$$330 \times 10 = 3,300$$

A reasonable estimate is that the school collected 3,300 canned items.

Estimate the product.

' Greek and Latin Roots

3rd – 5th Gra Root	3rd – 5th Grade Sample List Root . Meaning	Examples	Origin
ant, anti	against, opposed to,	antagonist, antibiotic	Greek
aqua	water	aquarium, aquatic	Latin
aud	to hear	audiobook, audience	Latin
auto	self	autobiography, autograph	
bio	life	biology, biography	Greek
cent	one hundred	century, percent	Latin
chron	time	chronological, chronic	ic Greek
cir/circum	around	circumference, circumstance, circular	mstance, circular Latin
duc/duct	lead, make	deduce, produce, educate	lucate
form	shape	formation, format	
geo	earth	geography, geology	γ
graph	write	autograph, graphic	
hetero	different	heteronym, heterogeneous	geneous
homo	same	homonym, homogenous	snons
logy	study of	biology, zoology	
mal	bad	malfunction, malpi	malfunction, malpractice, maleticence
meter/metr	measure	thermometer, perimeter	neter
micro	small	microscope, microphone	pnone
mono	one	monologue, monolopous	MOHOUS
multi	many	multimedia, multitask	task
photo	light	photograph, photosynthesis	osynthesis
port	to carry	import, transportation	tation
scope	viewing instrument	microscope, telescope	scope
spect	to look	inspection, specialty	none
vid/vis	to see	visual, video	

3rd – 5th Grade Sample List Greek and Latin Roots

ing d to, an	21.00 mic - 0.10	21.0 - 211 Of man Sample Part		>
against, opposed to, preventative and to hear and time around arou	Root	ing	les	mgrro
preventative vater to hear to hear self life life one hundred time time fead, make shape earth write sundy of bad ietr measure small one many rietr many light to carry viewing instrument stro see to hear a a a a a a a a a a a a				Greek
to hear a self a self a iife b iife b iife cone hundred c ircum around c duct lead, make a shape a a shape a earth bh write ch write cone same po sindy of bad ter/nietr measure pro light to carry tt to carry pe viewing instrument pe far off e far off frosee		preventative		
to hear a self iife def one lundred circum around circum around circum around dearth ph shape earth ph shape bigh same gy study of eter/nietr measure cter/nietr measure ctoro one ulti many noto light rot carry roto seet to see to see to see to see		water		Latin
self life life one hundred on time on lead, make of lead, make of write ero different on shape same on same one sudy of lear/nietr measure cro small one lift many oto light of viewing instrument ext to look le far off lar	aud	to hear		Latin
one lundred or circum around or carry ph write ead, make or card or carry oto light or carry oto look et far off far off cro see		self		Greek
one limidred or ime or ime or ime or or ime or		life		Greek
time time coum around uot lead, make shape earth earth o different same study of bad bad bad r/nietr measure o one imany io light to carry be viewing instrument to see vis to see	cent	one hundred	century, percent	Latin
roum around out of lead, make of lead, make of lead, make of learth of learth of liferent of study of study of small one one one one of light to carry to look far off far off vis see	chron	time		Greek
shape earth n write o different p same bad bad bad rifnetr measure o one many in many to carry to look far off far off	1	around	circumference, circumstance, circular	Latin
shape earth write o different same study of bad sr/nietr measure o one one i many to light to carry ye viewing instrument to see to see	duc/duct	lead, make	deduce, produce, educate	Lam
earth n write o different p same study of bad bad measure o one i many to light to carry pe viewing instrument tra off far off	form	shape	formation, format	Latun
write different same same study of bad had measure small one many light to carry viewing instrument to look far off ito see	geo	earth	geography, geology	Greek
different same same study of bad finetr measure small one many light to carry viewing instrument to look far off	graph	write	autograph, graphic	Greek
same study of bad hiter measure small one many to carry to carry to look far off to see	hetero	different	heteronym, heterogeneous	Greek
study of bad car/nietr measure ro small no one tit many to light t to carry t viewing instrument cut to look far off far off	homo	same	homonym, homogenous	Greek
bad er/nietr measure ro small no one fit many to light to carry pe viewing instrument cut to look far off far off far off	logy	study of	biology, zoology	
inietr measure small one many light to carry viewing instrument to look far off to see	mal	bad	malfunction, malpractice, malericence	
small one many light to carry viewing instrument to look far off to see	meter/metr	measure	thermometer, perimeter	Gleek
one many light to carry viewing instrument to look far off to see	micro	small	microscope, microphone	Greek
Itight to carry viewing instrument to look far off to see	mono	one	monologue, monotonous	Greek
light to carry viewing instrument to look far off to see	multi	many	multimedia, multitask	Latin
to carry to viewing instrument to look far off to see	photo	light	photograph, photosynthesis	Cleek
to look far off to see	port	to carry	linport, transportation	Laun
to look far off to see	scope	viewing instrument	microscope, telescope	Greek
far off vis to see	spect	to look	inspection, spectator	Laun
to see	tele	far off	television, telephone	Greek
	vid/vis	to see	visual, video	Laur



Common Prefixes

	. Common Prefixes	xes
Prefix	Definition	Examples
anti-	against	antibiotic, anticlimax
uto-		autograph, autobiography
01-	two	bicycle, binocular
de-	opposite	devalue, dehumidify
dis-	site of	detach, deploy
en-, em-		empower, entangle
fore-	before, front of	forecast, foresee
in-, im-, il-, ir-	not	impossible, innocent
inter-	between, among	international, interject
micro-	smail	microscope, microwave
mid-	middle	midway, midday
mis-	,	misunderstand, misconduct
multi-	many, much	multicolor, multipurpose
non-	not	nonsense, nondescript
ocf-	eight	octopus, octagon
over-	over, too much	overall, overworked
poly-	many, much	polygon, polymer
pre-	before	prevent, preview
quad-	four	quadrilateral, quadrant
re-	again	rebuild, recali
semi-	haif, partly, not fully	semicircle; semiformai
sub-	under	submarine, subconscious
tele	far, distant	telephone, television
trans-	across, change, through	transfer, transportation
super-	above, beyond	
trans-	across	transcontinental, translucent
tri	three	tripod, triangle
-un	not, opposite of	unable, unhappy
-junj-	one	unicycle, unicom
under-	under, too little	underground, undercurrent

Common Prefixes

		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
anti-	against	antibiotic, anticlimax
auto-	-	autograph, autobiography
bi-	two	bicycle, binocular
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semi-	half, partly, not fully	semicircle, semiformal
-qns	under	submarine, subconscious
tele	far, distant	telephone, television
trans-	across, change, through	through transfer, transportation
super-	- above, beyond	superhuman, superficial
trans-	across	transcontinental, translucent
tri	three	tripod, triangle
-un	not, opposite of	unable, unhappy
-iun	oue	unicycle, unicorn
under-	under, too little	underground, undercurrent



Com	2		
Common Suffixes			

	Oligination of	anjective	Ų
cloudy thirsty	characterized by	1.00	drate_
friendship, leadership	the state of being something	nona	e l
books, boxes	more than one	пош	-SCS
			-ious
conrageous, gracious	having qualities of	adjective	-ous, -cous,
sickness, wilderness	state of; condition of	noun	-ness
payment, employment	state of being; act of	почи	-ment
Huently, briefly	how something is	adverb	-ly
biology, archeology	science of, study of	y noun	-logy, -ology
helpless, effortless	without	adjective	-less
criticize, apologize	to make; to cause to become	verb	ize
	1		-itive
active, comparative	adjective form of noun	adjective	-ivc, -ativc,
responsibility, specially	state of	пош	-ity, -ty
loyalist, nutritionist	the person who is	noun	-ist
childish, bookish	like; similar	adjective	-ish
			-ation,
confusion, inspection	act; process	noun	-ion, -tion,
helping, running	verb forms; present participles	verb	-ing
amplify, justify	to make, have, become	verb .	-ify
parties, babies	piural, more than one	noun	ies
historic, asymmetric	having characteristics of	adjective	-íc
beautiful, hateful	full of	adjective	-ful
coldest, largest	the most	adjective	-est
teacher, boxer	one who; action or process; more	nom	-er, -or
	specific action		,
student, contestant	an action; condition; causing a	moun	-ent, -ant
excellence, importance	act; condition of	noun	-ence, -ance
hydrogen, mistaken	made of	noun/adjective	-еп
accomplished, accepted	past tense verbs; adjectives	verb/adjective	-ed
differentiate, duplicate	to make, have, become	verb	-ate
	relating/belonging to		
American, electrician	one having a certain skill;	noun	-an
circumstantial, seasonal	having characteristics of	adjective	-al -ial
manage, acreage	result of an action; collection	nom	age
collectable, gullible	is; can be	adjective	able, ible
Examples	Definition/Meaning	Part of Speech	Suffix

_	The same of the sa	THE RESERVE THE PROPERTY OF TH	the second	7
Ļ_	cloudy, thirsty	characterized by	adiective	V
<u></u>	friendship, leadership	the state of being something	поил	-ship
Ļ	books, boxes	more than one	пош	-s, -cs
				-ious
	icomageous, gracions	having qualities of	adjective	-ous, -cous,
<u> </u>	SICKINGSS, WILDERINGSS	state of; condition of	noun	-ness
	payment, enproyment	state of being; act of	пош	-ment
	пиевиу, одену	how something is	adverb	-ly
	biology, archeology	science of, study of	noun	-logy, -ology
1	helpiess, erroruess	without	adjective	-less
	criticize, apologize	to make; to cause to become	verb	-ize
<u> </u>				-itive
	active, comparative	adjective form of noun	adjective	-ivc, -ativc,
1	responsibility, specially	state of	noun	-ity, -ty
<u>.</u>	loyalist, nutriuonist	the person who is	noun	-ist
	childish, bookish	like; similar	adjective	-ish
				-ation,
-	confusion, inspection	act; process	noun	ion dion
	helping, tunning	verb forms; present participles	verb	-ing
	amplify, justify	to make, have, become	verb	-ify
	parties, babies	plural, more than one	noun	-ies
	historic, asymmetric	having characteristics of	adjective	ic
	beautiful, haterul	full of	adjective	-ful
_/	coldest, largest	the most	adjective .	est
	teacher, boxer	one who; action or process; more	nom	-er, -or
		specific action		
	student, contestant	an action; condition; causing a	moun	ent, -ant
	excellence, importance	act; condition of	noun	-ence, -ance
	hydrogen, mistaken	made of	noun/adjective	еп
	accomplished, accepted	past tense verbs; adjectives	verb/adjective	ed
	differentiate, duplicate	to make, have, become	verb	ate
		relating/belonging to		!
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	manage, acreage	result of an action; collection	nom	
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		Contract Con Contract		

Common Suffixes

(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Caracterization of	anjeonye	-у
cloudy thirsty	characterized by	INCOM.	drae
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			-ious
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responsibility, specialty	state of	noun	-tty, -ty
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childish, bookish	like; similar	adjective	ish
confusion, inspection	act; process	noun	ion, -tion, -ation,
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parties, babies	plural, more than one	noun	-ies
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beautiful, hateful	full of	adjective	-ful
coldest, largest	the most	adjective	est
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	specific action		-
student, contestant	an action; condition; causing a	noun	ent, -ant
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collectable, gullible	is; can be	adjective	-able, -ible
Examples	Definition/Meaning	Part of Speech	Suffix
	Continue Constitution		

203

Additional Practice

Name

Review

You can use an algorithm to multiply a multi-digit factor and a single-digit factor.

Find the product of $2,234 \times 6$.

Use a standard algorithm for multiplication.

$$\begin{array}{c} ^{+1} + ^{2} + ^{2} \\ 2, 234 \\ \times 6 \\ \hline 13, 404 \end{array}$$

The product is 13,404.

Solve using a standard algorithm for multiplication.

Relate Partial Products to an Algorithm

Name _____

Review

Below is a way to combine the partial products with an algorithm.

983

 $\overline{}$ 3 and the 5 are in the ones-place. Multiply 3 \times 5.

400 8 is in the tens place. Multiply 80×5 .

+ 4,500 9 is in the hundreds place. Multiply 900 \times 5.

4,915 Add 15, 400, and 4,500 for the product.

983

X 54,915Here it is using an algorithm.

Find the products of the equations first using partial products and then using an algorithm. Choose the correct answer.

Find the products of the equations using an algorithm.

7.
$$3,752 \times 5 =$$

*Make sure that you write and underline the question AND answer the question in a complete sentence. $\overset{\circ\circ}{\longrightarrow}$

Fish in a Tree Chapters 1-3 Comprehension questions

- On page 9, discuss the analogy, "I need attention like a fish needs a snorkel" and how it relates to how Ally feels when at school?
- Why was Ally in trouble for giving Mrs. Hall a sympathy card? Explain how it happened and why it was a mistake? (page 10)
- 3. On page 11, Ally says, "I wish I had my Sketchbook of Impossible Things. It's the only thing that makes me feel like I'm not a waste of space." In the sketchbook, Ally draws the images she sees in her mind movies. Why does Ally feel like a waste of space? What are Ally's strengths?
- 4. On page 14, discuss the analogy, "me avoiding consequences would be like the rain avoiding the sky" What does this mean and how does it relate to Ally's experiences in school?
- 5. List three character traits to describe Ally.
- Predict: Why do you think Ally might have given her teacher a sympathy card?
- 7. What does Ally mean when, on page 15 she says, "even I'm tired of me?"

*Make sure that you write and underline the question AND answer the question in a complete sentence.

Fish in a Tree Chapters 4-6 Comprehension questions

- Ally and Ally's mom both loved the book Alice in Wonderland. Ally describes the book, "a book about living in a world where nothing makes sense". In your world, what are some things that don't make sense to you?
- Grandpa and Dad would ask Travis and Ally if they were having a silver dollar day or a wooden nickel day. What is the difference between these types of days? Describe a silver dollar day for you. Describe a wooden nickel day for you.
- Travis told Ally to not have low expectations of herself. Do you think you have low or high expectations for yourself? Give an example of some high expectations to have.
- 4. Was your Chapter 2 prediction correct? What cluses could have led you to believe that? Has there ever been a time YOU have felt humiliated or embarrassed like Ally? What does it feel like?

Ally: Fish in a Tree Character 4-Square Name:

Thoughts	Feelings			
•	·			
Actions	Words			
•	•			
Fish in a Tree pg. 24 "'So your favorite big brother had a silver dollar day today!' I think of Grandpa and Dad, who always asked us if we were having a silver				
dollar day or a wooden nickel one." Base	ed on what Travis says and does in the			
chapter, what do you think a silver dollar day is? What is a wooden nickel day? Use details from the text to support your thinking.				
·				
	,			



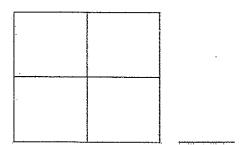
-digit multiplication = Box Method

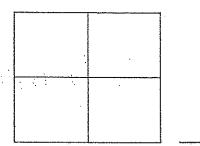
Work out the answers to these multiplication questions using the box method.

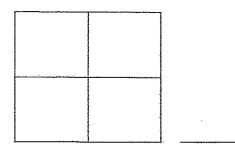
$$27 \times 18 = 486$$

	7	20	'n
200	7ŏ	200	10
70			
160	E /	160 _5	۵
+ 56	_D6		160
486	L		1

 <u> L</u>	.







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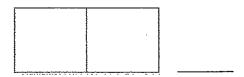


-digit multiplication Box Method

Work out the answers to these multiplication questions using the box method.

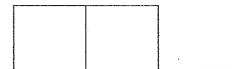
$$19 \times 3 = 57$$

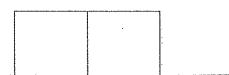


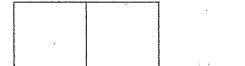


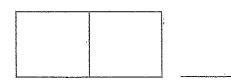


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Fish in a Tree Chapter 7-9 questions

- 1. What does Ally mean when she says, "if trying to read helped, I'd be a genius"?
- 2. Why does Ally look at going to the office with Mrs. Silver as a "get out of jail free card"?
- 3. What do you predict Mr. Daniels and Ally's relationship will be like?
- 4. What does Ally's coin really represent?
- 5. When thinking about what to bring to school that represents her, Ally considers a bad of nothing or a bag of dirt. *What does this tell us about how Ally is thinking about herself? *What would be in your bag? *What does it mean to you?
- 6. Ally likes math and art in school. *How are you and Ally alike? *How are you different from Ally? *What subjects do you like in school? *What subjects do you dislike? *Why?

Fish in a Tree Chapters 10-12 questions

- 1. Ally draws a "dark room" in her notebook so she cannot be seen. How do you think she feels on a daily basis, and what will she or someone else perhaps do to change that? Make a prediction.
- 2. Discuss with someone your thoughts on Albert? What type of person is he as compared to Ally? How are they the same or different?
- 3. How does Ally feel about going along with making fun of Albert? Have you ever felt this way?
- 4. Ally tells Mr. Daniels, "it would be easier to be invisible", What do you think she means by this? Have you ever felt invisible? Explain.
- 5. In the cafeteria Ally wishes she was more like Albert. In what ways does she want to be more like him?
- 6. How did Ally "make things right" with Albert? Have you ever had to do this with a friend or classmate? Explain.