

Factor and multiple chains

Worksheet

Mr Ward



Warm up - Speedy Tables

How quickly can you complete each table?



x		6		3
8				
9	36		63	
		36		
5			35	

x	3		9	
2		24		8
8				
7		84		
	33			



Factors and Multiples chains

Do one now! How many numbers did you use?



1. Pick an even number from the grid opposite. Cross it out.
2. This is the start of the chain.
Now the next number must be a factor or a multiple of this first number.
3. Then continue to build the chain, choosing a factor or multiple of the previous number until it is no longer possible.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50



Factors and Multiples chains

Play on your own.

How big is your chain?



1. Pick an even number from the grid opposite. Cross it out.
2. This is the start of the chain. Now the next number must be a factor or a multiple of this first number.
3. Then continue to build the chain, choosing a factor or multiple of the previous number until it is no longer possible.

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31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50



Factors and Multiples chains



PLAYER 1

PLAYER 2

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

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Alternative chains using 100 square



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

How many different chains can you create for the three different types of alternate chains?

- 1. Chains which alternate between a multiple and factor each time.
- 2. Chains which are made up of multiples of the first number only.
- 3. Chains which are made up of factors of the first number only.



Alternative chains using 100 square



1	2	3	4	5	6	7	8	9	10
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31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Alternative chains using 100 square



PLAYER 1

1	2	3	4	5	6	7	8	9	10
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41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

PLAYER 2

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
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71	72	73	74	75	76	77	78	79	80
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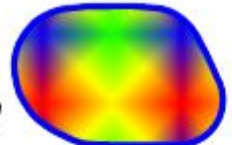



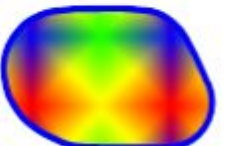
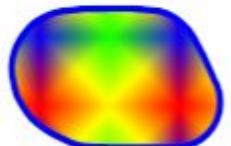
Challenge Slide



Here are two more alternating multiple and factor chains.

What are the missing values?
Can you prove your answers and explain how you know?

48 , 12 ,  10 , 30 ,  , 99 , 11

36, 3,  11, 55, 5,  8

