Namir's Marvellous Masterpieces

Line Master 1
(Assessment Master)

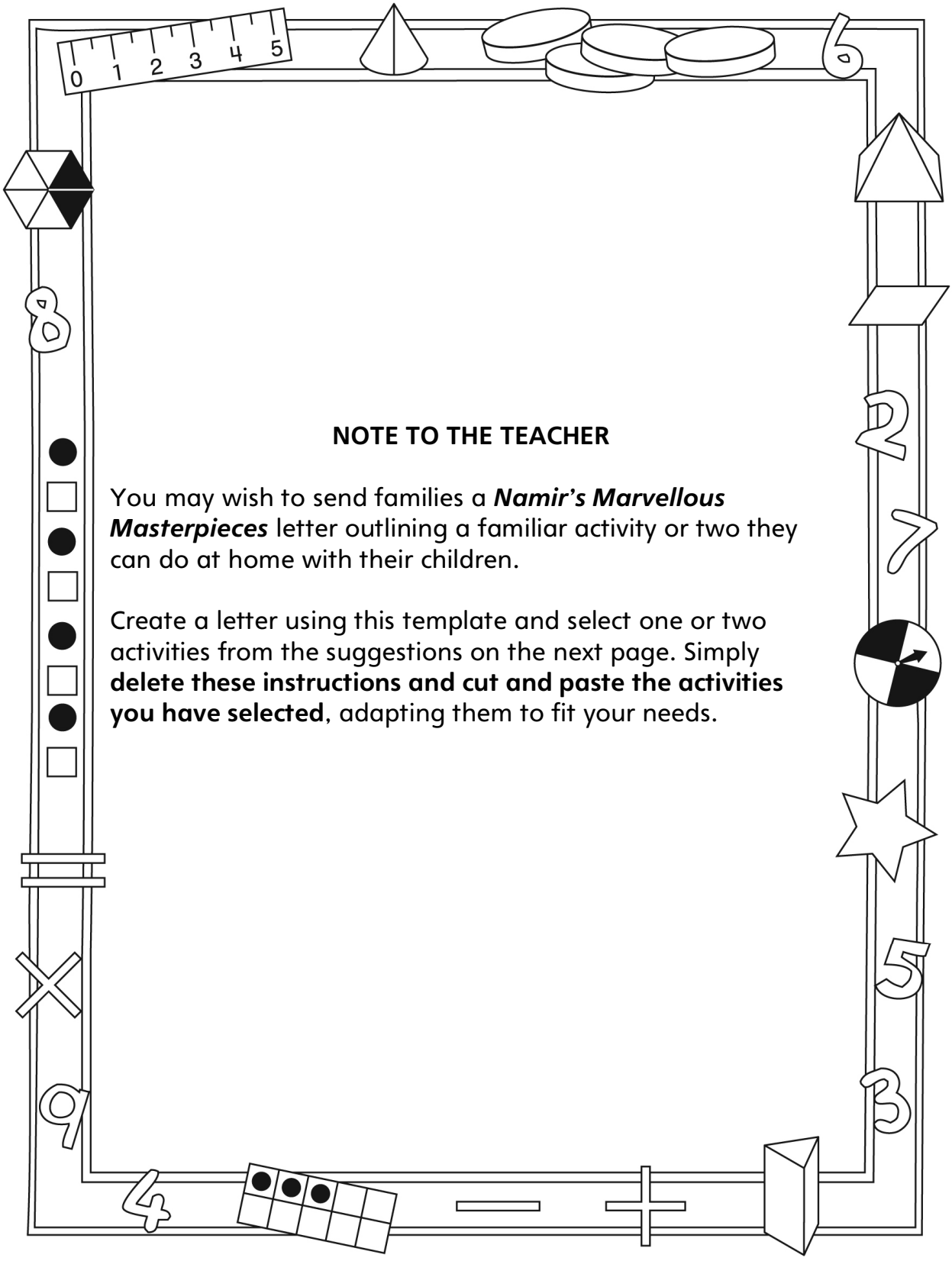
Name: _____

Investigate Growing and Shrinking Patterns (Further Developed)	**Not observed**	**Sometimes**	**Consistently**
Creates increasing/decreasing patterns			
Describes increasing/decreasing pattern			
Extends number patterns			
Finds missing elements in number patterns			
Use Equations to Represent Growing and Shrinking Patterns			
Generalizes and explains the rule for arithmetic patterns (including the starting point and change)			
Writes one-step addition and subtraction equations to match a pattern rule			

Strengths:

Next Steps:

Connecting Home and School Line Master 2–1



NOTE TO THE TEACHER

You may wish to send families a ***Namir's Marvellous Masterpieces*** letter outlining a familiar activity or two they can do at home with their children.

Create a letter using this template and select one or two activities from the suggestions on the next page. Simply **delete these instructions and cut and paste the activities you have selected**, adapting them to fit your needs.

Connecting Home and School Line Master 2–2

Dear Family:

We have been working on ***Namir's Marvellous Masterpieces***, which engages children in conversations, investigations, and activities that help to develop their understanding of the big math idea that "Patterns can be described mathematically." Particular focus is placed on describing, extending, and creating growing and shrinking patterns, and on using equations to represent growing and shrinking patterns. Try this activity at home with your child.

✂ -

Reading the Story: As you read the story, explore the patterns with your child and invite him/her to predict the next terms. After you read, you might gather some small objects, such as different coloured beans or buttons, and use the Math Mat (inside back cover of the book) to help you and your child create repeating, growing, and shrinking patterns.

✂ -

Pattern Walk: Take a walk outside with a pencil and notepad, and record all the patterns you see. You could also look for patterns inside. Challenge your child to see who can find more patterns. Play again, but this time, look only for growing or shrinking patterns.

✂ -

Money Patterns: Invite your child to use nickels and dimes to create growing and shrinking money patterns. For the first round, use only dimes or only nickels, so that the total goes up (or down) by only 10 or 5. Then, encourage your child to use both coins to create patterns. You can try to guess the pattern rule or keep extending the pattern. Repeat, but this time you create the pattern and have your child give the pattern rule or extend it.

✂ -

Toothpick Designs: Create a growing or shrinking pattern with your child using toothpicks. When the pattern is finished, ask your child to state the pattern rule. For an additional challenge, create a pattern without showing it to your child and then remove part of it (a middle section). Challenge your child to fill in the missing part.

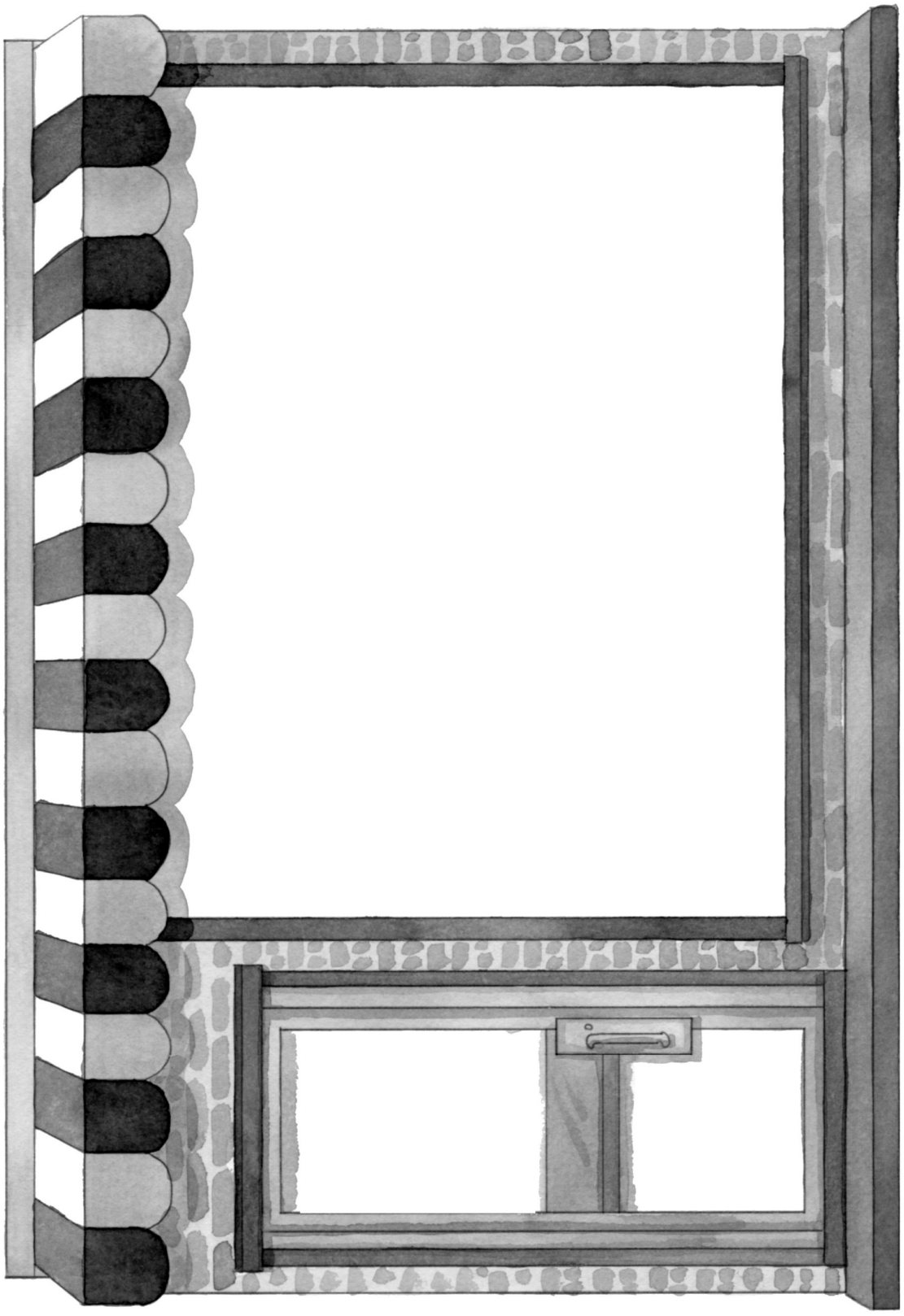
✂ -

Sincerely,

____

Namir's Marvellous Masterpieces Math Mat

Line Master 3



Hundred Charts

Line Master 4–1

Name: _____

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

Hundred Charts

Line Master 4–2

Name: _____

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

Hundred Charts

Line Master 4–3

Name: _____

201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300

Hundred Charts

Line Master 4–4

Name: _____

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

Hundred Charts

Line Master 4–5

Name: _____

401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430
431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450
451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470
471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490
491	492	493	494	495	496	497	498	499	500

Hundred Charts

Line Master 4–6

Name: _____

501	502	503	504	505	506	507	508	509	510
511	512	513	514	515	516	517	518	519	520
521	522	523	524	525	526	527	528	529	530
531	532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549	550
551	552	553	554	555	556	557	558	559	560
561	562	563	564	565	566	567	568	569	570
571	572	573	574	575	576	577	578	579	580
581	582	583	584	585	586	587	588	589	590
591	592	593	594	595	596	597	598	599	600

Hundred Charts

Line Master 4–7

Name: _____

601	602	603	604	605	606	607	608	609	610
611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630
631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650
651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670
671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690
691	692	693	694	695	696	697	698	699	700

Hundred Charts

Line Master 4–8

Name: _____

701	702	703	704	705	706	707	708	709	710
711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730
731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750
751	752	753	754	755	756	757	758	759	760
761	762	763	764	765	766	767	768	769	770
771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790
791	792	793	794	795	796	797	798	799	800

Hundred Charts

Line Master 4–9

Name: _____

801	802	803	804	805	806	807	808	809	810
811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830
831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850
851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870
871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890
891	892	893	894	895	896	897	898	899	900

Hundred Charts

Line Master 4–10

Name: _____

901	902	903	904	905	906	907	908	909	910
911	912	913	914	915	916	917	918	919	920
921	922	923	924	925	926	927	928	929	930
931	932	933	934	935	936	937	938	939	940
941	942	943	944	945	946	947	948	949	950
951	952	953	954	955	956	957	958	959	960
961	962	963	964	965	966	967	968	969	970
971	972	973	974	975	976	977	978	979	980
981	982	983	984	985	986	987	988	989	990
991	992	993	994	995	996	997	998	999	1000

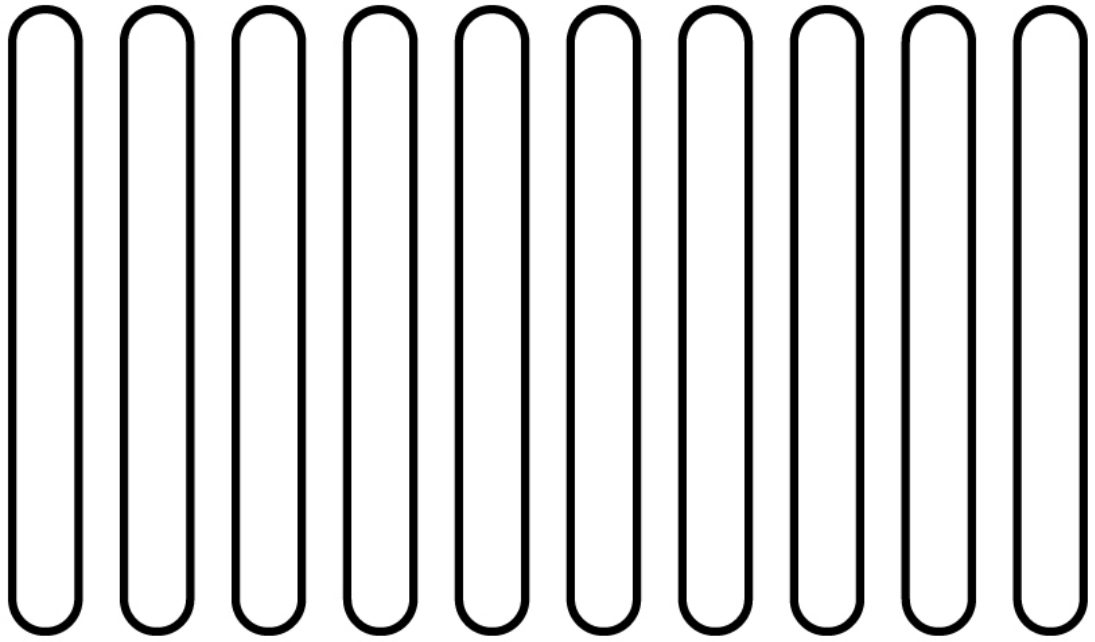
Pattern Scramble

Line Master 5–1

Name: _____

Circle the pattern type: growing shrinking

Record your pattern. Then, add 3 more terms (craft sticks).



Pattern Scramble

Line Master 5–2

Name: _____

Write the pattern rule.

Write equations to represent your pattern.

Pattern Hunt

Line Master 6

Name: _____

Type of pattern: _____

Sketch:

Pattern rule:

Equations:

Tree Patterns

Line Master 7

Name: _____

Tree Number	Number of Blocks I Added	Total Number of Blocks in My Tree	Equation
1			
2			
3			
4			
5			
6			
7			
8			

Roll a Pattern Rule

Line Master 8

Name: _____

1. Roll 2 number cubes to make a 2-digit number. This is your starting number.
2. Choose a Pattern Rule Card to find out if your pattern will be growing or shrinking.
3. Roll 1 number cube to tell you what number to use in your pattern rule.
4. Complete the table. The first row shows an example.

Starting Number (1st Term)	Growing or Shrinking	Pattern Rule	2nd Term	3rd Term	4th Term	5th Term	6th Term
26	growing	add 4	30	34	38	42	46

Pattern Rule Cards

Line Master 9

shrinking	shrinking	shrinking
growing	growing	growing

Mini-Book Template

Line Master 10

People Patterns

by

_____

At the start of the day, 1 person comes in the store.
Altogether, there are

_____ _____

_____ _____

_____ _____

in the store.

_____ more come in the store.

Now there are

_____ _____

_____ _____

_____ _____

in the store.

_____ more come in the store.

Now there are

_____ _____

_____ _____

_____ _____

in the store.

Pattern Problems

Line Master 11–1

Namir is biking to his family's store, which is 5 blocks away. If it takes him 2 minutes to bike 1 block, how long will it take him to get to the store?

Number of Blocks	Number of Minutes
1	2

Naia saves 4 quarters each day she works at the store. If she works 6 days, how many quarters will she have saved?

Number of Days	Number of Quarters Saved
1	4

Pattern Problems

Line Master 11–2

Naia gives her brother these numbers: 150, 125, 100, 75.

What is the pattern rule?

What are the next 2 terms of this pattern?

A delivery truck brought 5 loaves of bread to the family store on Monday, 16 loaves of bread on Tuesday, and 27 loaves of bread on Wednesday. If this pattern continues, how many loaves of bread will be delivered on Thursday and Friday?

Namir sold 7 sandwiches on Thursday, 14 sandwiches on Friday, and 21 sandwiches on Saturday. If this pattern continues, how many sandwiches will Namir sell on Sunday and Monday?

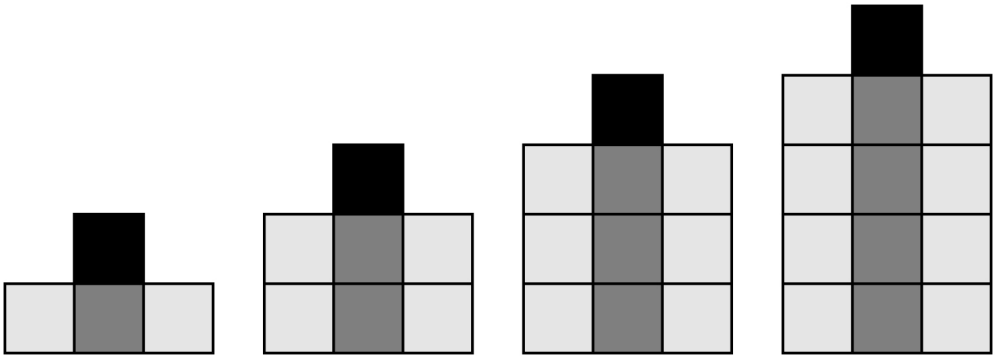
Naia sold 15 boxes of dog treats during the first week of the month. She sold 25 boxes the next week and 35 the following week. If this pattern continues, how many boxes of dog treats will she sell in the next 2 weeks?

Pattern Problems

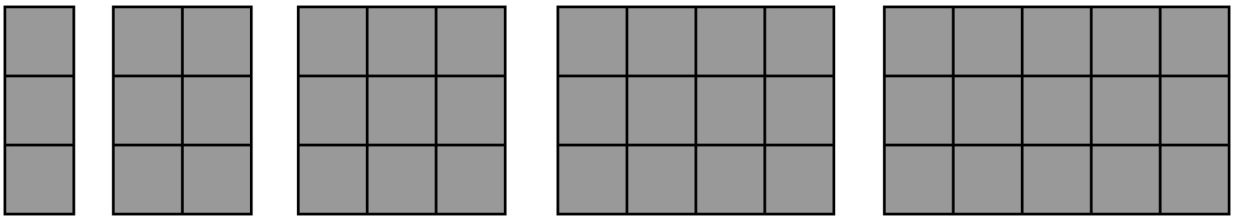
Line Master 11–3

In the early winter, Namir's family sells gingerbread cookies. The first week, they sell 10 cookies. The next week, the sales double. The third week, the sales double again. How many cookies do they sell during the second and third weeks?

Naia made this pattern out of cereal boxes at the store. What would be the next 2 terms of this pattern?



Naia decides to make another pattern. It looks like this:



What would be the next 3 terms of this pattern?