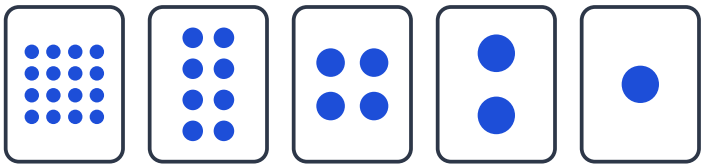
Name _____ Date _____



Binary Code Secret Messages

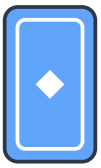
Face up is 1. Face down is 0. Write the code and the number.

The binary cards





Face up is 1



Face down is 0

Each card has twice the dots of the card on its right.

1.



0 0 1 0 1

Number 5 Example

2.



Number _____

3.



Number _____

4.



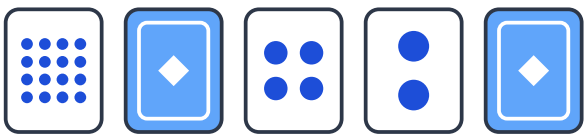
Number _____

5.



Number _____

6.



Number _____

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Name _____ Date _____



Binary Code Secret Messages

Write the value under each digit. Add to find the number.

1. Example

16	8	4	2	1
0	1	1	0	1
0	8	4	0	1

= 13

2.

16	8	4	2	1
0	0	1	1	0

= _____

3.

16	8	4	2	1
1	0	1	0	1

= _____

4.

16	8	4	2	1
1	1	1	0	0

= _____

5.

16	8	4	2	1
0	1	0	1	1

= _____

6.

16	8	4	2	1
1	1	0	0	1

= _____

7.

16	8	4	2	1
1	1	1	1	1

= _____

8.

16	8	4	2	1
0	1	1	1	0

= _____

9.

16	8	4	2	1
1	0	0	1	0

= _____

10.

16	8	4	2	1
0	0	0	1	1

= _____

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Name _____ Date _____



Binary Code Secret Messages

Write each number in binary. Take the biggest card that fits first.

1. 20

16	8	4	2	1
1	0	1	0	0

Example

20 = 16 + 4 _____

2. 7

16	8	4	2	1

7 = _____

3. 15

16	8	4	2	1

15 = _____

4. 24

16	8	4	2	1

24 = _____

5. 27

16	8	4	2	1

27 = _____

6. 10

16	8	4	2	1

10 = _____

7. 29

16	8	4	2	1

29 = _____

8. 16

16	8	4	2	1

16 = _____

9. 4

16	8	4	2	1

4 = _____

10. 23

16	8	4	2	1

23 = _____

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Name _____ Date _____



Binary Code Secret Messages

Fill in the missing codes. Then find the patterns.

Number	8	4	2	1
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3				
4	0	1	0	0
5				
6				
7	0	1	1	1
8	1	0	0	0
9				
10				
11	1	0	1	1
12				
13	1	1	0	1
14				
15				

1. Every odd number ends in _____

2. Every even number ends in _____

3. Each card is worth how many times the card on its right?

   _____

4. The biggest number four cards can make is

   _____

5. The biggest number five cards can make is

   _____

6. How many numbers can five cards make, counting 0?

   _____

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Name _____ Date _____



Binary Code Secret Messages

Turn each code into a number, then a letter. Read the message!

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
14	15	16	17	18	19	20	21	22	23	24	25	26

1. 01000 00101 01100 01100 01111 10111 01111 10010 01100 00100

Example 8

H _ _ _ _ _ _ _ _ _ _ _ _

2. 10011 01110 01111 10111 00100 00001 11001

_ _ _ _ _ _ _

3. 01001 00011 00001 01110 00011 01111 00100 00101

_ _ _ _ _ _ _ _

4. 01000 01111 10100 00011 01111 00011 01111 00001

_ _ _ _ _ _ _ _ _

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Name _____ Date _____



Binary Code Secret Messages

Write each letter as a number, then in binary. Make a bracelet.

1. **H** 8 **A** ____ **T** ____ Example

0 1 0 0 0 ☐☐☐☐☐ ☐☐☐☐☐

2. **S** ____ **L** ____ **E** ____ **D** ____

☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐

3. **S** ____ **K** ____ **A** ____ **T** ____ **E** ____

☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐

A binary bracelet: color a bead for each 1, leave a 0 white.

C 3 **O 15** **L 12** **D 4**

4. 

5. **Your initials: write the letters and their numbers, then color.**

☐ ____ ☐ ____



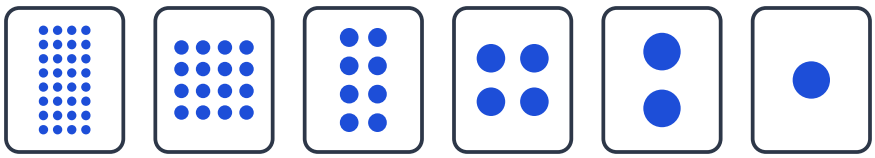
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Name _____ Date _____



Binary Code Secret Messages

Challenge: a sixth card is worth 32. Numbers to 63!



32 16 8 4 2 1

Binary to number

1. 32 16 8 4 2 1 — 1 0 1 1 0 1 = 45 (Example)

2. 32 16 8 4 2 1 — 1 0 0 1 1 0 = ____

3. 32 16 8 4 2 1 — 1 1 0 1 0 0 = ____

4. 32 16 8 4 2 1 — 1 1 1 1 1 1 = ____

5. 32 16 8 4 2 1 — 1 0 0 0 0 1 = ____

6. 32 16 8 4 2 1 — 1 1 1 0 1 1 = ____

Number to binary

1. 40 (Example) — 32 16 8 4 2 1 — 1 0 1 0 0 0

2. 50 — 32 16 8 4 2 1 — ____

3. 37 — 32 16 8 4 2 1 — ____

4. 61 — 32 16 8 4 2 1 — ____

5. 44 — 32 16 8 4 2 1 — ____

6. 57 — 32 16 8 4 2 1 — ____

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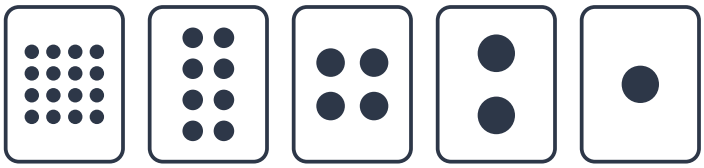
Name _____ Date _____



Binary Code Secret Messages

Face up is 1. Face down is 0. Write the code and the number.

The binary cards





Face up is 1



Face down is 0

Each card has twice the dots of the card on its right.

1.



0 0 1 0 1

Number 5 Example

2.



Number _____

3.



Number _____

4.



Number _____

5.



Number _____

6.



Number _____

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Name _____ Date _____



Binary Code Secret Messages

Write the value under each digit. Add to find the number.

1. Example

16	8	4	2	1
0	1	1	0	1
0	8	4	0	1

= 13

2.

16	8	4	2	1
0	0	1	1	0

= _____

3.

16	8	4	2	1
1	0	1	0	1

= _____

4.

16	8	4	2	1
1	1	1	0	0

= _____

5.

16	8	4	2	1
0	1	0	1	1

= _____

6.

16	8	4	2	1
1	1	0	0	1

= _____

7.

16	8	4	2	1
1	1	1	1	1

= _____

8.

16	8	4	2	1
0	1	1	1	0

= _____

9.

16	8	4	2	1
1	0	0	1	0

= _____

10.

16	8	4	2	1
0	0	0	1	1

= _____

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Name _____ Date _____



Binary Code Secret Messages

Write each number in binary. Take the biggest card that fits first.

1. 20

16	8	4	2	1
1	0	1	0	0

Example

20 = 16 + 4 _____

2. 7

16	8	4	2	1

7 = _____

3. 15

16	8	4	2	1

15 = _____

4. 24

16	8	4	2	1

24 = _____

5. 27

16	8	4	2	1

27 = _____

6. 10

16	8	4	2	1

10 = _____

7. 29

16	8	4	2	1

29 = _____

8. 16

16	8	4	2	1

16 = _____

9. 4

16	8	4	2	1

4 = _____

10. 23

16	8	4	2	1

23 = _____

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Name _____ Date _____



Binary Code Secret Messages

Fill in the missing codes. Then find the patterns.

Number	8	4	2	1
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3				
4	0	1	0	0
5				
6				
7	0	1	1	1
8	1	0	0	0
9				
10				
11	1	0	1	1
12				
13	1	1	0	1
14				
15				

1. Every odd number ends in _____

2. Every even number ends in _____

3. Each card is worth how many times the card on its right?

   _____

4. The biggest number four cards can make is

   _____

5. The biggest number five cards can make is

   _____

6. How many numbers can five cards make, counting 0?

   _____

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Name _____ Date _____



Binary Code Secret Messages

Turn each code into a number, then a letter. Read the message!

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
14	15	16	17	18	19	20	21	22	23	24	25	26

1. 01000 00101 01100 01100 01111 10111 01111 10010 01100 00100

Example 8

H _ _ _ _ _ _ _ _ _ _ _ _

2. 10011 01110 01111 10111 00100 00001 11001

_ _ _ _ _ _ _

3. 01001 00011 00001 01110 00011 01111 00100 00101

_ _ _ _ _ _ _ _ _ _ _ _

4. 01000 01111 10100 00011 01111 00011 01111 00001

_ _ _ _ _ _ _ _ _ _ _ _

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Name _____ Date _____



Binary Code Secret Messages

Write each letter as a number, then in binary. Make a bracelet.

1. **H** 8 **A** ____ **T** ____ Example

0 1 0 0 0 ☐☐☐☐☐ ☐☐☐☐☐

2. **S** ____ **L** ____ **E** ____ **D** ____

☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐

3. **S** ____ **K** ____ **A** ____ **T** ____ **E** ____

☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐ ☐☐☐☐☐

A binary bracelet: color a bead for each 1, leave a 0 white.

C 3 **O 15** **L 12** **D 4**

4.



5. **Your initials: write the letters and their numbers, then color.**

☐ ____ ☐ ____



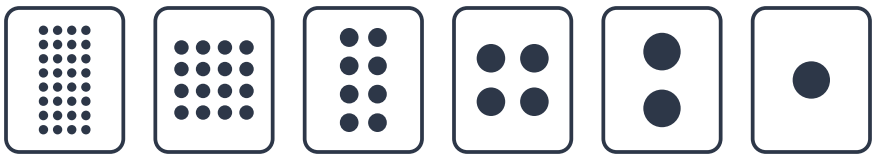
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Name _____ Date _____



Binary Code Secret Messages

Challenge: a sixth card is worth 32. Numbers to 63!



Binary to number

1. 32 16 8 4 2 1 — Example

1 0 1 1 0 1 = 45

2. 32 16 8 4 2 1

1 0 0 1 1 0 = _____

3. 32 16 8 4 2 1

1 1 0 1 0 0 = _____

4. 32 16 8 4 2 1

1 1 1 1 1 1 = _____

5. 32 16 8 4 2 1

1 0 0 0 0 1 = _____

6. 32 16 8 4 2 1

1 1 1 0 1 1 = _____

Number to binary

1. 40 — Example

32 16 8 4 2 1

1 0 1 0 0 0

2. 50

32 16 8 4 2 1

3. 37

32 16 8 4 2 1

4. 61

32 16 8 4 2 1

5. 44

32 16 8 4 2 1

6. 57

32 16 8 4 2 1

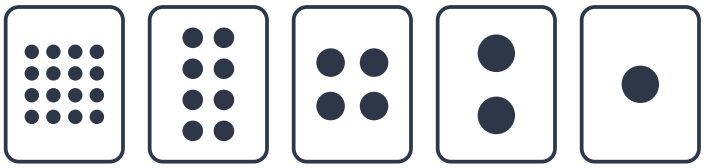
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Binary Code Secret Messages

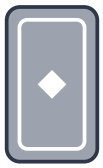
Face up is 1. Face down is 0. Write the code and the number.

The binary cards





Face up is 1



Face down is 0

Each card has twice the dots of the card on its right.

1.



0 0 1 0 1

Number 5 Example

2.



0 1 1 0 0

Number 12

3.



1 0 0 1 1

Number 19

4.



1 1 0 1 0

Number 26

5.



0 1 0 0 1

Number 9

6.



1 0 1 1 0

Number 22

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Binary Code Secret Messages

Write the value under each digit. Add to find the number.

1. Example

16	8	4	2	1
0	1	1	0	1
0	8	4	0	1

= 13

2.

16	8	4	2	1
0	0	1	1	0
0	0	4	2	0

= 6

3.

16	8	4	2	1
1	0	1	0	1
16	0	4	0	1

= 21

4.

16	8	4	2	1
1	1	1	0	0
16	8	4	0	0

= 28

5.

16	8	4	2	1
0	1	0	1	1
0	8	0	2	1

= 11

6.

16	8	4	2	1
1	1	0	0	1
16	8	0	0	1

= 25

7.

16	8	4	2	1
1	1	1	1	1
16	8	4	2	1

= 31

8.

16	8	4	2	1
0	1	1	1	0
0	8	4	2	0

= 14

9.

16	8	4	2	1
1	0	0	1	0
16	0	0	2	0

= 18

10.

16	8	4	2	1
0	0	0	1	1
0	0	0	2	1

= 3

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Binary Code Secret Messages

Write each number in binary. Take the biggest card that fits first.

1. 20 (Example)

16	8	4	2	1
1	0	1	0	0

20 = 16 + 4

2. 7

16	8	4	2	1
0	0	1	1	1

7 = 4 + 2 + 1

3. 15

16	8	4	2	1
0	1	1	1	1

15 = 8 + 4 + 2 + 1

4. 24

16	8	4	2	1
1	1	0	0	0

24 = 16 + 8

5. 27

16	8	4	2	1
1	1	0	1	1

27 = 16 + 8 + 2 + 1

6. 10

16	8	4	2	1
0	1	0	1	0

10 = 8 + 2

7. 29

16	8	4	2	1
1	1	1	0	1

29 = 16 + 8 + 4 + 1

8. 16

16	8	4	2	1
1	0	0	0	0

16 = 16

9. 4

16	8	4	2	1
0	0	1	0	0

4 = 4

10. 23

16	8	4	2	1
1	0	1	1	1

23 = 16 + 4 + 2 + 1

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Binary Code Secret Messages

Fill in the missing codes. Then find the patterns.

Number	8	4	2	1
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

1. Every odd number ends in **1**

2. Every even number ends in **0**

3. Each card is worth how many times the card on its right?

   2

4. The biggest number four cards can make is

   15

5. The biggest number five cards can make is

   31

6. How many numbers can five cards make, counting 0?

   32

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Binary Code Secret Messages

Turn each code into a number, then a letter. Read the message!

A 1	B 2	C 3	D 4	E 5	F 6	G 7	H 8	I 9	J 10	K 11	L 12	M 13
N 14	O 15	P 16	Q 17	R 18	S 19	T 20	U 21	V 22	W 23	X 24	Y 25	Z 26

1.

Example	8	5	12	12	15		23	15	18	12	4
	01000	00101	01100	01100	01111		10111	01111	10010	01100	00100
	H	E	L	L	O		W	O	R	L	D

2.

19	14	15	23		4	1	25
10011	01110	01111	10111		00100	00001	11001
S	N	O	W		D	A	Y

3.

9	3	1	14		3	15	4	5
01001	00011	00001	01110		00011	01111	00100	00101
I	C	A	N		C	O	D	E

4.

8	15	20		3	15	3	15	1
01000	01111	10100		00011	01111	00011	01111	00001
H	O	T		C	O	C	O	A

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Binary Code Secret Messages

Write each letter as a number, then in binary. Make a bracelet.

1. **H** 8 **A** 1 **T** 20 — Example

0 1 0 0 0 | 0 0 0 0 1 | 1 0 1 0 0

2. **S** 19 **L** 12 **E** 5 **D** 4

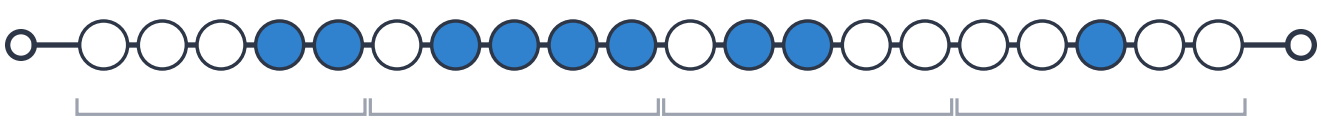
1 0 0 1 1 | 0 1 1 0 0 | 0 0 1 0 1 | 0 0 1 0 0

3. **S** 19 **K** 11 **A** 1 **T** 20 **E** 5

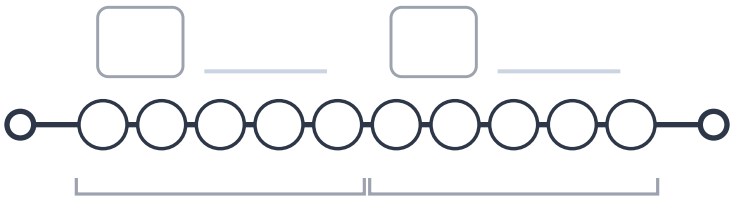
1 0 0 1 1 | 0 1 0 1 1 | 0 0 0 0 1 | 1 0 1 0 0 | 0 0 1 0 1

A binary bracelet: color a bead for each 1, leave a 0 white.

4. C 3 O 15 L 12 D 4



5. Your initials: write the letters and their numbers, then color.

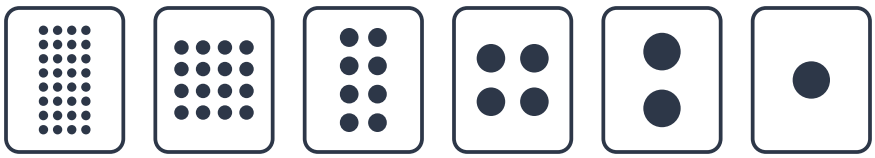


Answers will vary.

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Binary Code Secret Messages

Challenge: a sixth card is worth 32. Numbers to 63!



Binary to number

1. 32 16 8 4 2 1 — 1 0 1 1 0 1 = 45 (Example)

2. 32 16 8 4 2 1 — 1 0 0 1 1 0 = 38

3. 32 16 8 4 2 1 — 1 1 0 1 0 0 = 52

4. 32 16 8 4 2 1 — 1 1 1 1 1 1 = 63

5. 32 16 8 4 2 1 — 1 0 0 0 0 1 = 33

6. 32 16 8 4 2 1 — 1 1 1 0 1 1 = 59

Number to binary

1. 40 (Example) — 32 16 8 4 2 1 — 1 0 1 0 0 0

2. 50 — 32 16 8 4 2 1 — 1 1 0 0 1 0

3. 37 — 32 16 8 4 2 1 — 1 0 0 1 0 1

4. 61 — 32 16 8 4 2 1 — 1 1 1 1 0 1

5. 44 — 32 16 8 4 2 1 — 1 0 1 1 0 0

6. 57 — 32 16 8 4 2 1 — 1 1 1 0 0 1

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