



Introduction Card

Introduction

STEM MEETS ART!

Build pixel-art masterpieces, expand STEM skills, and stretch your creativity with STEM Explorers: Suncatchers! Three reusable frames in different shapes provide the perfect canvas: simply select a frame, pick a challenge card, and snap the translucent crystal cubes into place. Hang your completed piece in the window and watch the sunlight illuminate your artistic vision!

Instruction Card

COLOR BY COORDINATES

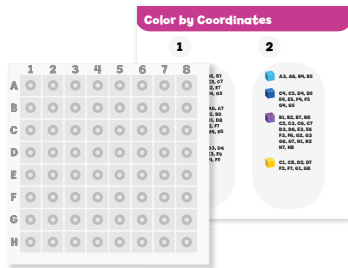
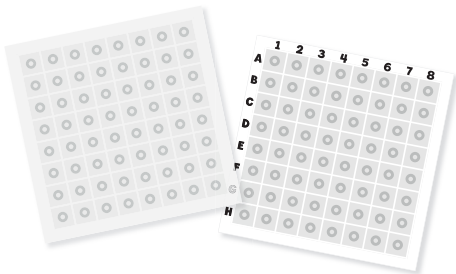
Color by Coordinates

INSTRUCTIONS:



Color by Coordinates puzzles use this frame only.

Place the card and frame on a flat surface, side by side. Gather the cubes in the colors shown and snap them into the frame according to the coordinates printed on the page. Letters run vertically (y-axis) on the left side of the frame; numbers run horizontally (x-axis) across the top. Use your finger to mark the exact location. Where the letter and number intersect is where you place your cubes! When finished, check the answer key.



Coordinate Graph

COLOR BY COORDINATES

1**2****3****4****5****6****7****8****A****B****C****D****E****F****G****H**

Color by Coordinates

1



**B2, B3, B6, B7
C2, C4, C5, C7
D2, D7, E2, E7
F3, F6, G4, G5**



**A2, A3, A6, A7
B1, B4, B5, B8
C1, C8, D1, D8
E1, E8, F2, F7
G3, G6, H4, H5**



**C3, C6, D3, D4
D5, D6, E3, E4
E5, E6, F4, F5**

2



A3, A6, B4, B5



**C4, C5, D4, D5
E4, E5, F4, F5
G4, G5**



**B1, B2, B7, B8
C2, C3, C6, C7
D3, D6, E3, E6
F3, F6, G2, G3
G6, G7, H1, H2
H7, H8**



**C1, C8, D2, D7
F2, F7, G1, G8**

Color by Coordinates

3



A1, A2, B1, B2



**A3, B3, C1, C2,
C3**



**A4, B4, C4, D4
D1, D2, D3**



**A5, B5, C5, D5,
E5, E1, E2, E3,
E4**



**D6, D7, D8, F4,
G4, H4**



**E6, E7, E8, F5,
G5, H5**



**F6, F7, F8, G6,
H6**



G7, G8, H7, H8

4



**A1, A2, A7, A8,
B1, B8, H3, H4,
H5, H6**



**A3, A4, A5,
A6, B2, B7, C1,
C8**



**B3, B4, B5, B6,
C2, C7, D1, D8**



**C3, C4, C5, C6,
D2, D7, E1, E8**



**D3, D4, D5, D6,
E2, E7, F1, F8**



**E3, E4, E5, E6,
F2, F7, G1, G8**



**F3, F4, F5, F6,
G2, G7, H1, H8**



**G3, G4, G5, G6,
H2, H7**

Color by Coordinates

5



**A7, B3, B6, B8,
C1, C5, D2, D4,
D7, E3, E6, E8,
F1, F5, F7, G2,
G4, G6, G8,
H3, H7**



**A3, B2, B4, B7,
C3, C6, C8, D1,
D5, E2, E4, F3,
G7**



**C7, D6, D8, E1,
E5, F2, F4, G3**

6



D6, E5, E7, F6



C2, D1, D3, E2



D5, D7, F5, F7



C1, C3, E1, E3



D2, E6



**F2, G2, G6, H1,
H2, H3, H4, H5,
H6, H7, H8**

Color by Coordinates

7



**B6, C3, C5, C7,
D2, D4, E4**



**C8, D1, D7, D8,
E1, E2**



**F3, F4, F5, F6,
G4, G5, H4, H5**

8



**A1, A2, A7, A8,
B1, B3, B6, B8,
C2, C4, C5, C7,
D3, D4, D5, D6,
E2, E4, E5, E7,
F1, F2, F3, F4,
F6, F7, F8, G2,
G3, G4, G5, G6,
G7, H3, H4, H5,
H6**



**B2, B7, C3, C6,
F5**



E3, E6

Color by Coordinates

9



**A2, A3, A6, A7,
B3, B4, B5, B6,
C2, C3, C4, C5,
C6, C7, D1, D8,
E1, E8, F2, F3,
F4, F5, F6, F7,
G3, G6, H2, H3,
H6, H7**



**D2, D4, E3, E5,
E7**



A1, A8



**D5, D7, E2, E4,
E6**



D3, D6

10



**A1, A3, A4, A5,
A6, A8, B1, B2,
B4, B5, B7, B8,
C2, C7, D1, D8**



**F1, F2, F3, F4,
F5, F6, F7, F8,
G1, G2, G3, G4,
G5, G6, G7, G8,
H1, H2, H3, H4,
H5, H6, H7, H8**



**D2, D3, D4, D5,
D6, D7**



C3, C4, C5, C6



**A2, A7, B3, B6,
C1, C8**



**E1, E2, E3, E4,
E5, E6, E7, E8**

Color by Coordinates

11



**A1, A5, A8, B2,
B4, B7, C3, C6,
D2, D8, E1, E7,
F3, F6, G2, G5,
G7, H1, H4, H8**



**C4, C5, D3, D4,
D5, D6, E3, E4,
E5, E6, F4, F5**

12



**A3, A6, B4, B5,
E2, E3, E6, E7,
F3, F6**



**C3, C4, C5, C6,
D2, D3, D4, D5,
D6, D7, E1, E4,
E5, E8, F1, F2,
F4, F5, F7, F8,
G2, G3, G4, G5,
G6, G7, H3, H4,
H5, H6**

Instruction Card

CODING CRAFTS

Coding Crafts

INSTRUCTIONS:



Coding Craft puzzles use this frame only.

Coding involves a sequence of commands called an algorithm, or coding string, that tells a computer what to do. Read the coding string for each row (A-H) of the frame: a letter represents a color, and this symbol (>) represents a space. Place the cubes on the frame to match the symbols in the coding string. Follow the key below, and check the answer key when finished:

R = Red

L = Leaf

B = Blue

O = Orange

G = Green

V = Violet

Y = Yellow

S = Sky

P = Pink

Coding Crafts

1



Y **C** **B**

A y>>>y
B >yy>
C >BCyyCB>
D BByyyyyBB
E >BCCCCB>
F >>yyyyy>>
G >CC>
H >yy>

2



R **Y** **O** **G**

A ROYG
B ROYG
C RRROYGGG
D OOOOyyyy
E yyyyyOOOO
F GGGYORRR
G GYOR
H GYOR

Coding Crafts

3



C



Y



R

A >>yY

B >y>>

C >RRRRRR>

D >CCCCC>

E >CCCCC>

F >>CCCC>>

G >CC>

H >CC>

4



Y



O



R

A YOYO

B YOYO

C YOYOYOYO

D RRRRRRR

E RRRRRRR

F >RRRRR>

G RRRR

H RRRR

Coding Crafts

5



C



S



O



R

A >CC>
B >CC>
C >>CSSC>>
D >>CSSC>>
E >CCCCC>
F >CCCCC>
G RRRR
H RORO

6



V



Y

A >VV>
B VVVV
C >V>VV>V>
D VVVYVVVV
E VVVYVVVV
F >V>VV>V>
G VVVV
H >VV>

Coding Crafts

7



C



S



P

A C>>C
B CCCC
C >>CCCC>>
D >CSCSCC>
E >CCPCCC>
F >>CCCC>>
G >CC>
H >>>>

8



P



G



R

A G>>G
B >GG>
C >>RRRR>>
D >RPRPRR
E >RRPRPR>
F >RPRPRR>
G RPRP
H >RR>

Coding Crafts

9



V

S

A >VV>
B VVVV
C >VVVVVV>
D VVVVVVVV
E >V>VSV>V
F >>>>S>>>
G S>S>
H >SS>

10



V

P

R

A >>>>
B >>>>
C >RR>>RR>
D RVVRRVVR
E RVPVPVVR
F >RVPPVR>
G RVVR
H >RR>

Coding Crafts

11



P



G



C

A >>>>
B >>>>
C GPPPPPPG
D GPCPCPPG
E GPPPPCPG
F >GPPPPG>
G GGGG
H >>>>

12



O



R



G

A >OO>
B OOOO
C >OROROO>
D ROOOOROO
E OOROOORO
F RRGGGGRR
G GGGG
H >GG>

Instruction Card

MATCH & BUILD

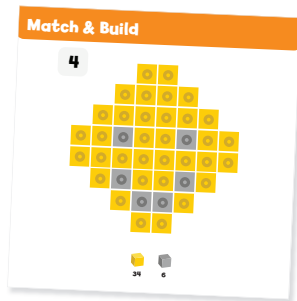
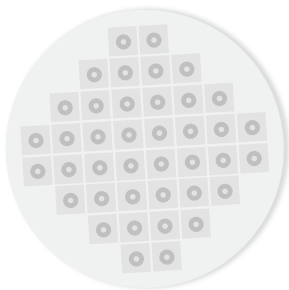
Match & Build

INSTRUCTIONS:



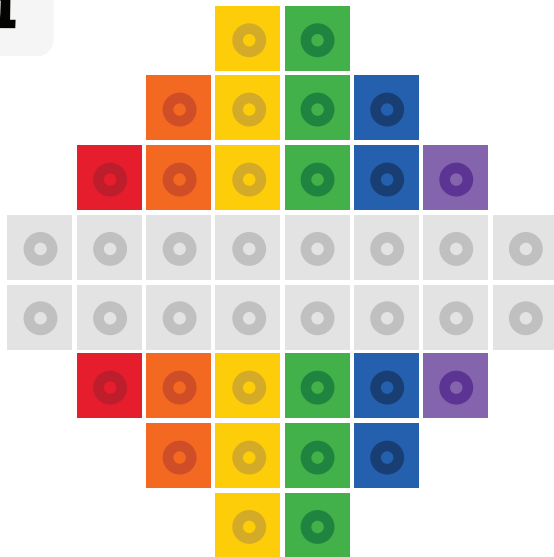
Match & Build puzzles use this frame only.

Place the correct number and color of cubes to match the image shown on the card. What did you build? Why, it's a sun-catching stunner!



Match & Build

1



2



4



6



6



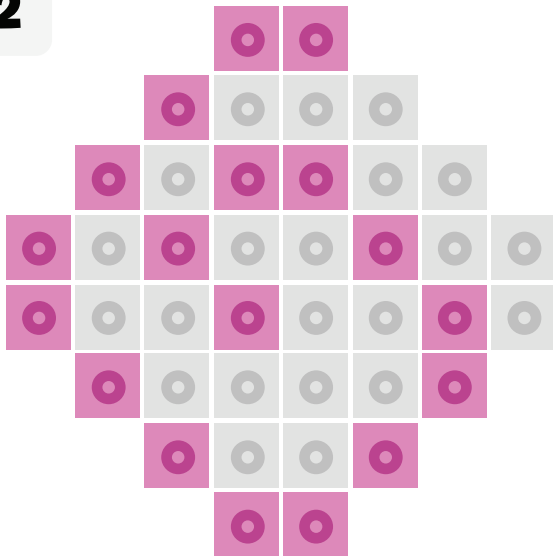
4



2

Match & Build

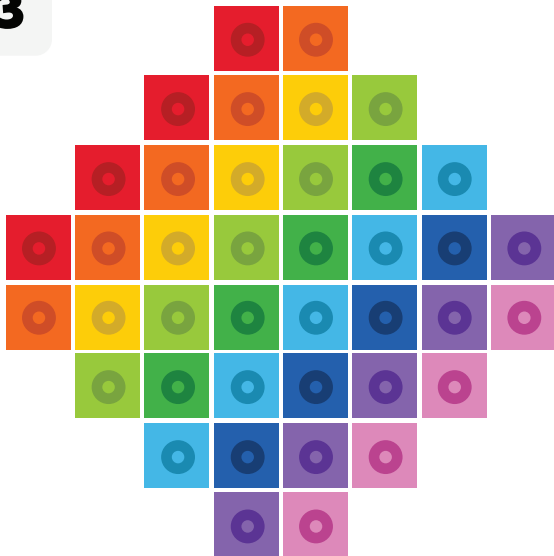
2



18

Match & Build

3



4



5



4



5



4



5



4



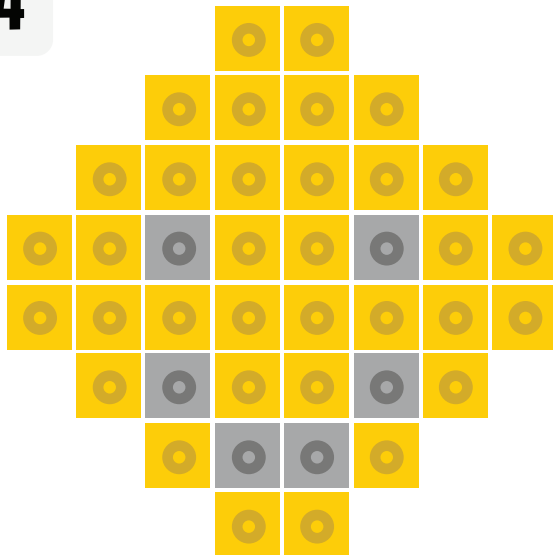
5



4

Match & Build

4



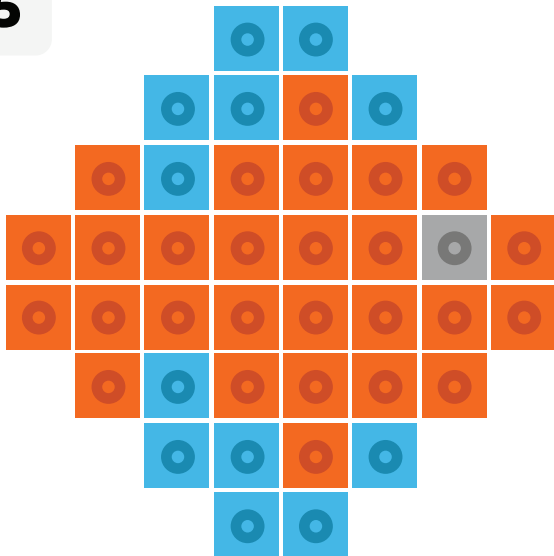
34



6

Match & Build

5



27



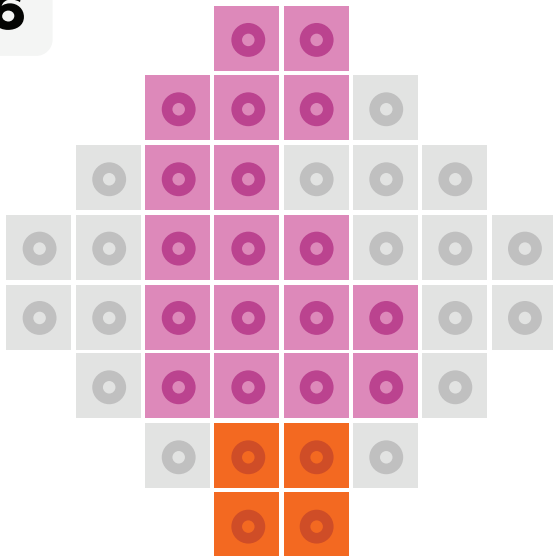
1



12

Match & Build

6



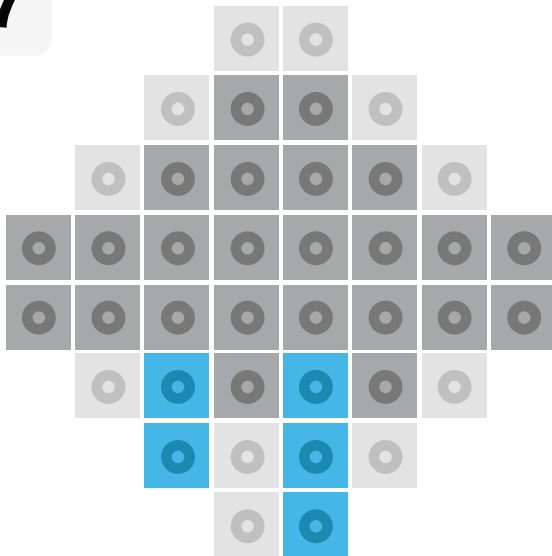
18



4

Match & Build

7



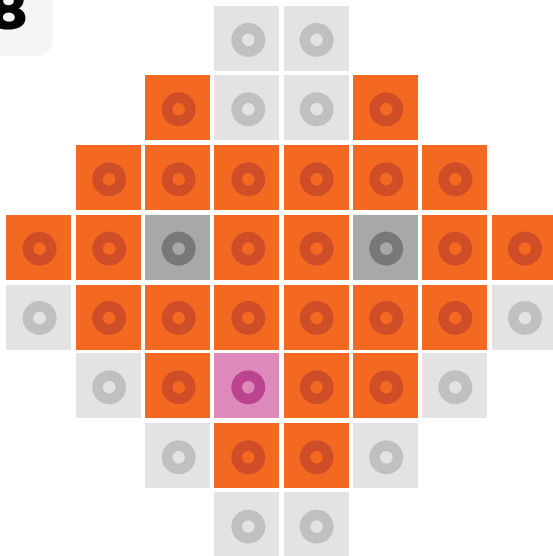
24



5

Match & Build

8



1



25

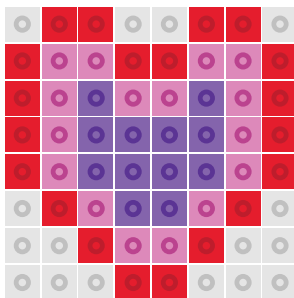


2

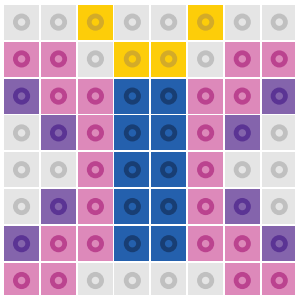
Answer Key

Color by Coordinates

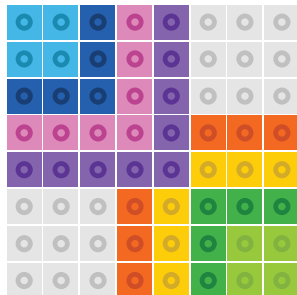
1



2



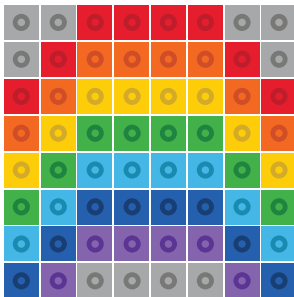
3



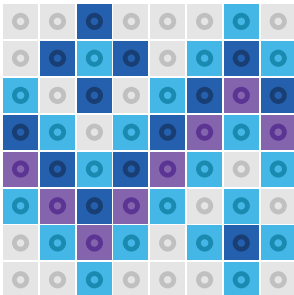
Answer Key

Color by Coordinates

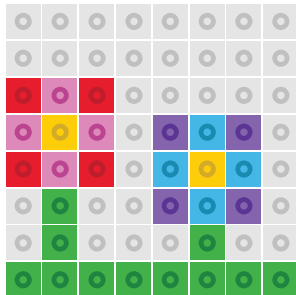
4



5



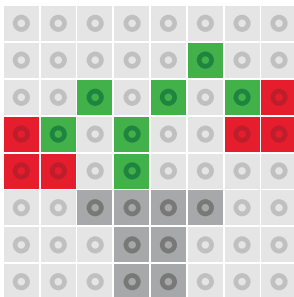
6



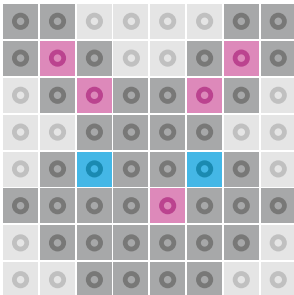
Answer Key

Color by Coordinates

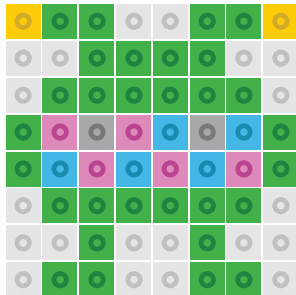
7



8



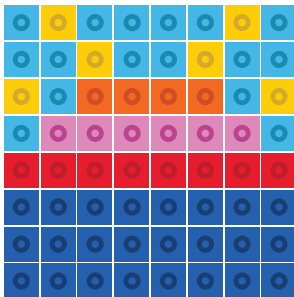
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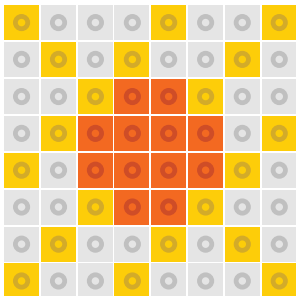
Answer Key

Color by Coordinates

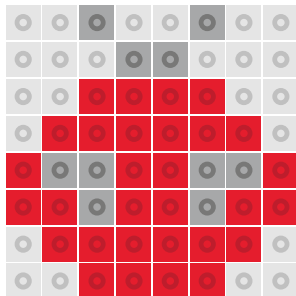
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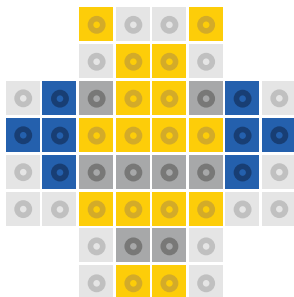
11



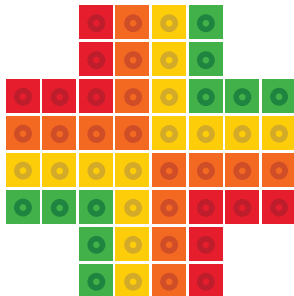
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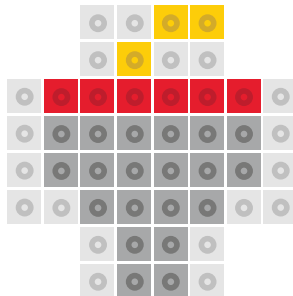
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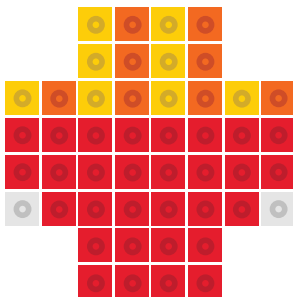
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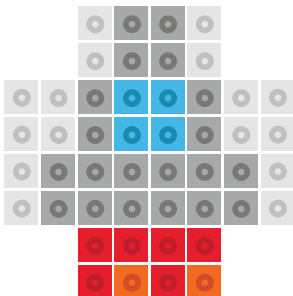
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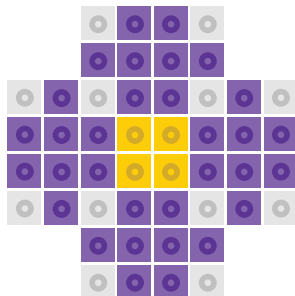
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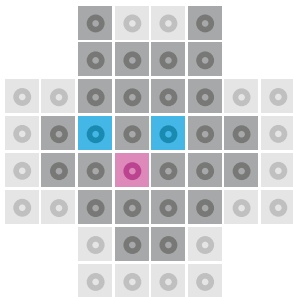
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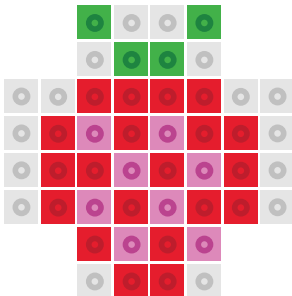
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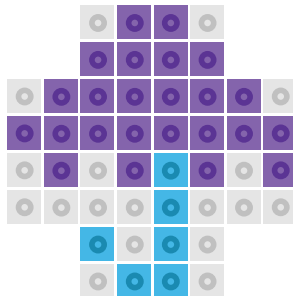
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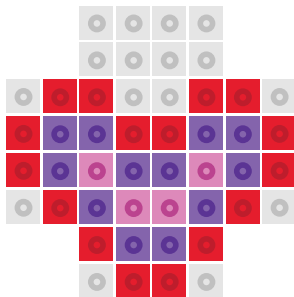
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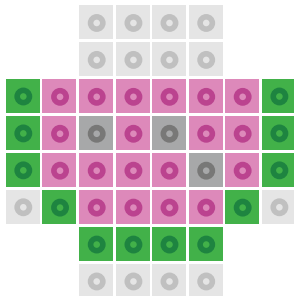
9



10



11



12

