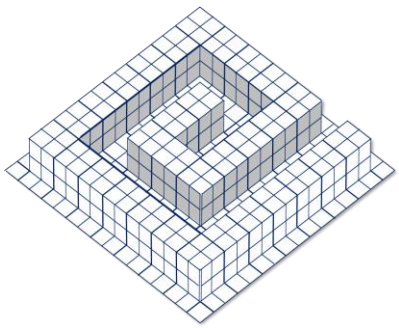


CUBISM ORIGAMI

Eli Bogo Barel

www.BogOrigami.com

About The Author

The passion to fold was lit with my first cigarette - I was folding the metal papers that seals the cigarettes, testing their physical limits endlessly. I've cut down on smoking, but the passion to fold persisted; fortunately, I might add, as fire and paper don't go together very well.

Following a chance encounter with **Ilan Garibi** in 2011, I discovered the world of Origami: the uniqueness of its language, technique, and mostly the group of unique other, who share my passion for it.

I've developed dozens of modulation and tessellation models since those early days. Those models were based on knowledge I have acquired in conferences I've attended.

The urge to fold and create, helps me get by the long days of my chosen career. I fold during meetings, and update my colleagues when a new model is born.

My greatest joy come when I overcome the paper's limitations, and create diverse folding variations, resulting in new and surprising models.

Cubism Origami

As a child, I loved playing Lego. Yes, it was fun to assemble Lego Kits, but the part I enjoyed most was letting my imagination go wild, while using basic Lego bricks.

I chose to write my book the same way I was playing Lego, using a basic brick (in this case an origami molecule) and imagination.

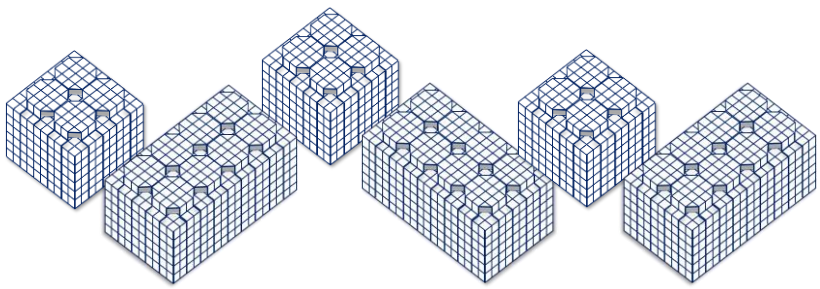
This book is a collection of 32 tessellation models which are variations on that single molecule.

The chapters in this book and the models in each chapter are presented in an ascending order of difficulty.

The diagrams were drawn by me, not exactly in the orthodox origami way, but I hope they are understandable for you to use.

Hope you will enjoy folding the models, as much as I did, and that this book will serve as a gateway to the fascinating world of tessellation.

Eli (Bogo) Barel
Tel Aviv, 2020



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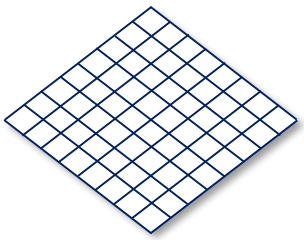
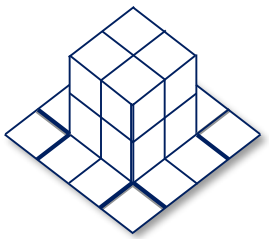
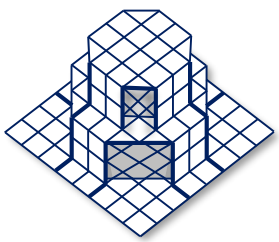
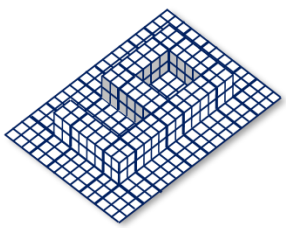
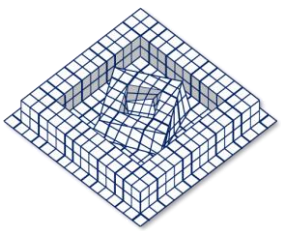




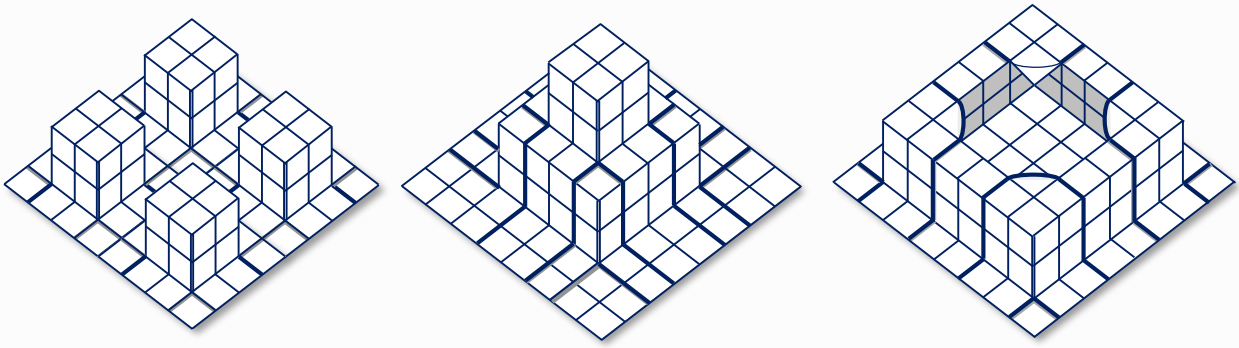






Chapter B

Basic Molecules



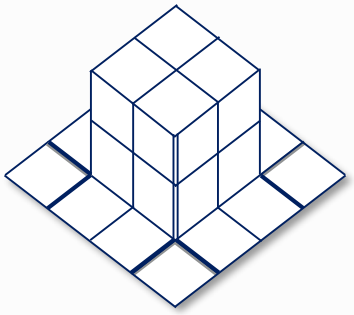
CHAPTER B

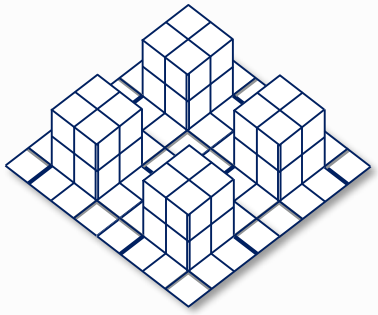
Basic Molecules

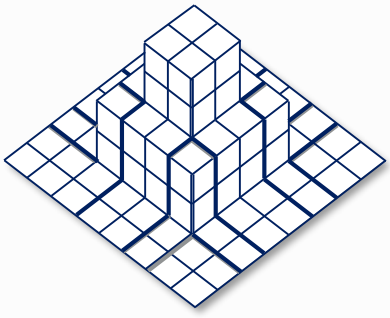
The first step is getting to know the basic molecule.

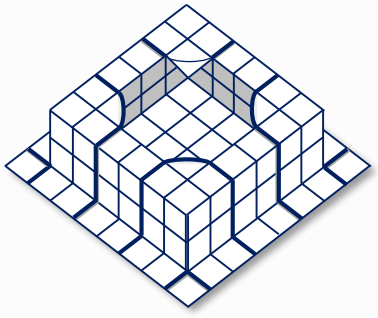
In this chapter we will go from simple variations of the molecule to a more complex one.
The models in this chapter are sorted in an ascending order of difficulty.

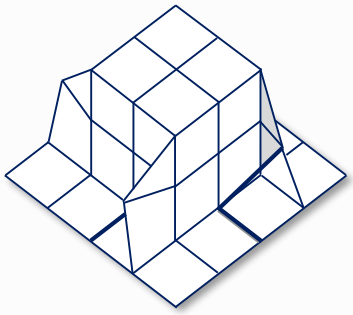
Basic Molecules

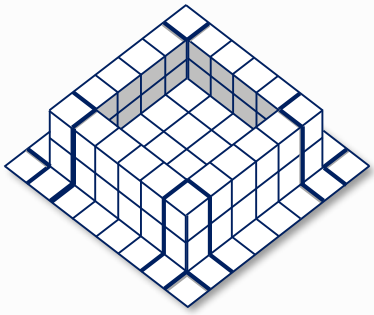


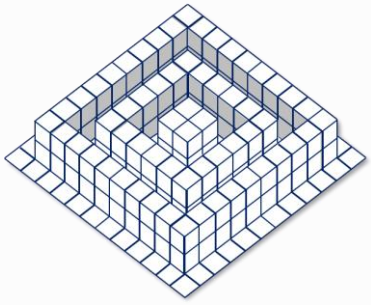


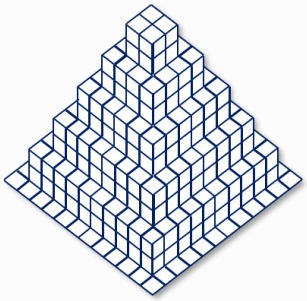


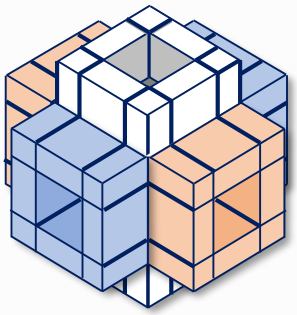






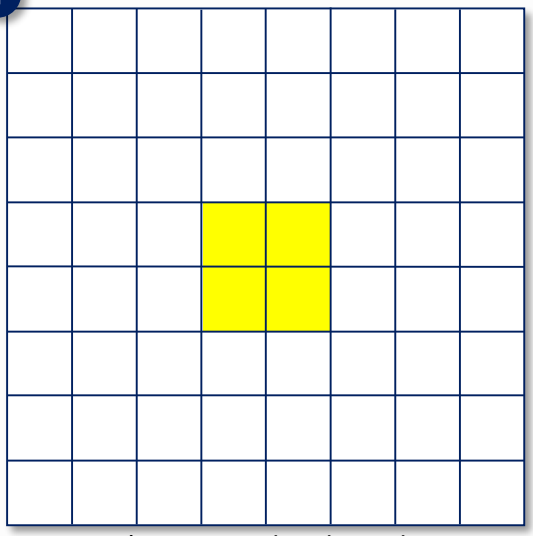






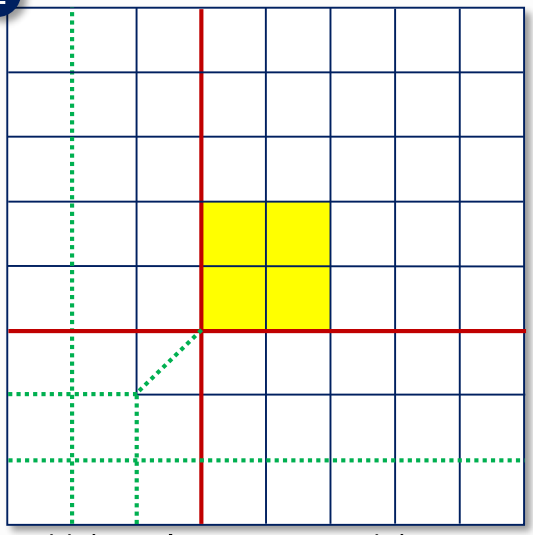
Basic Molecule

1



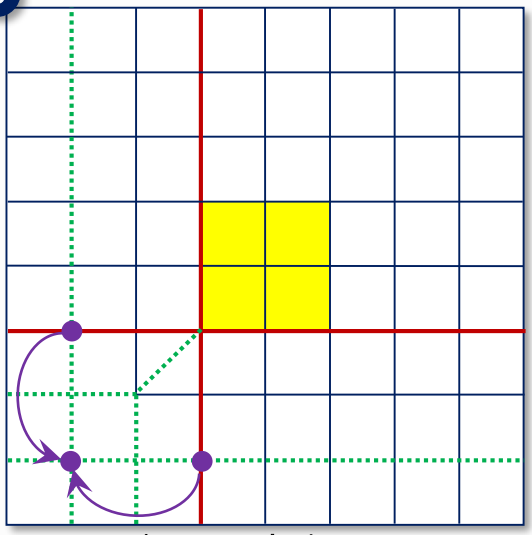
Start with a 8X8 grid, color side up.
The molecule is marked in **yellow.**

2



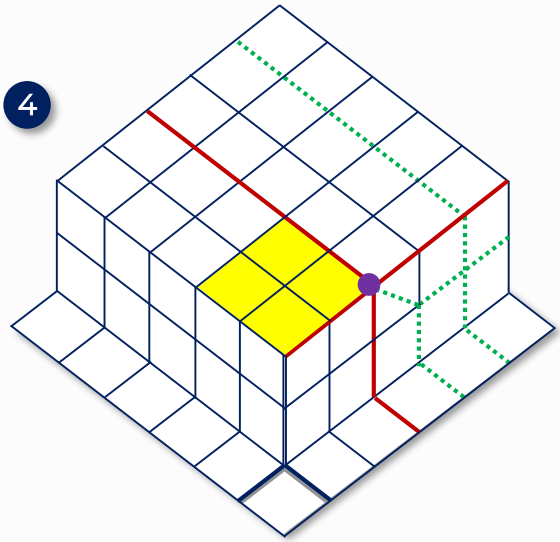
Fold the **red** mountains and the **green** valleys.

3



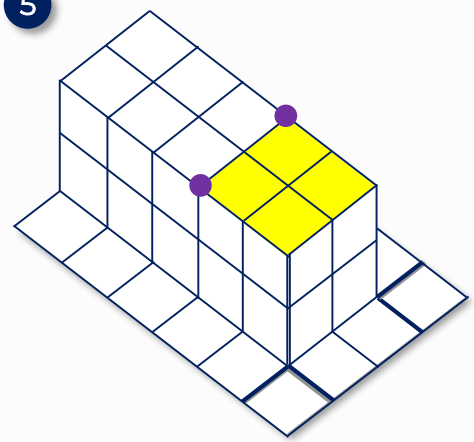
Connect the 3 **purple** dots.

4



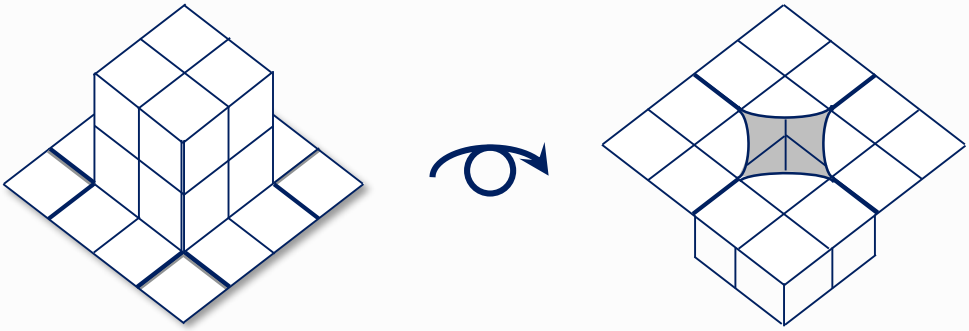
Repeat steps 2 & 3 on the corner marked with **purple** dot.

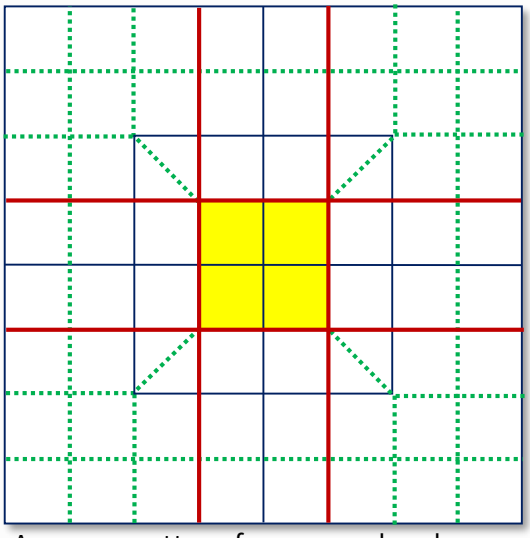
5



Repeat steps 2 & 3 on the other corners marked with **purple** dots.

6



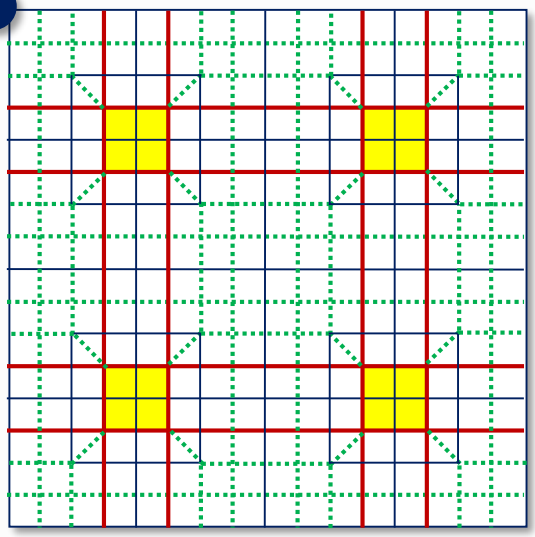


A crease pattern for one molecule.

4 Basic Molecules

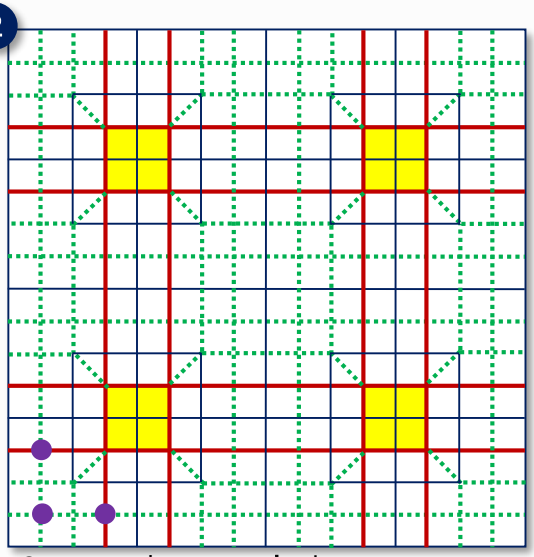
The challenge in tessellation is folding several molecules together. The molecule itself is symmetrical, so the next units are at the same orientation.

1



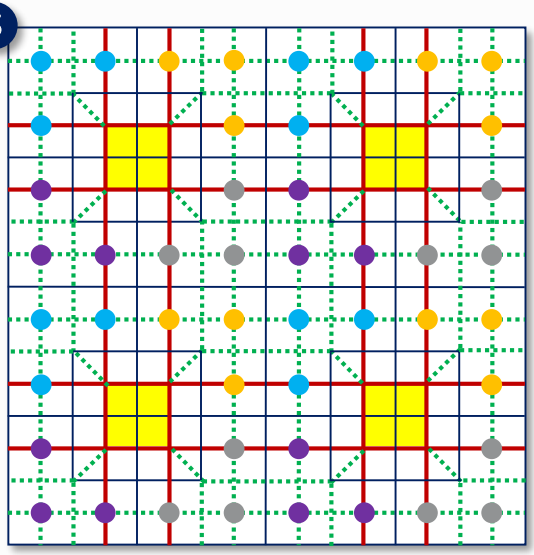
Start with a 8X8 grid, color side up. Fold the **red** mountains and the **green** valleys.

2

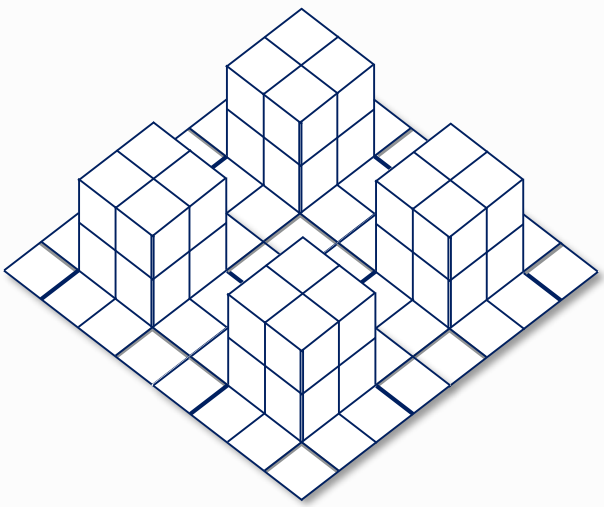


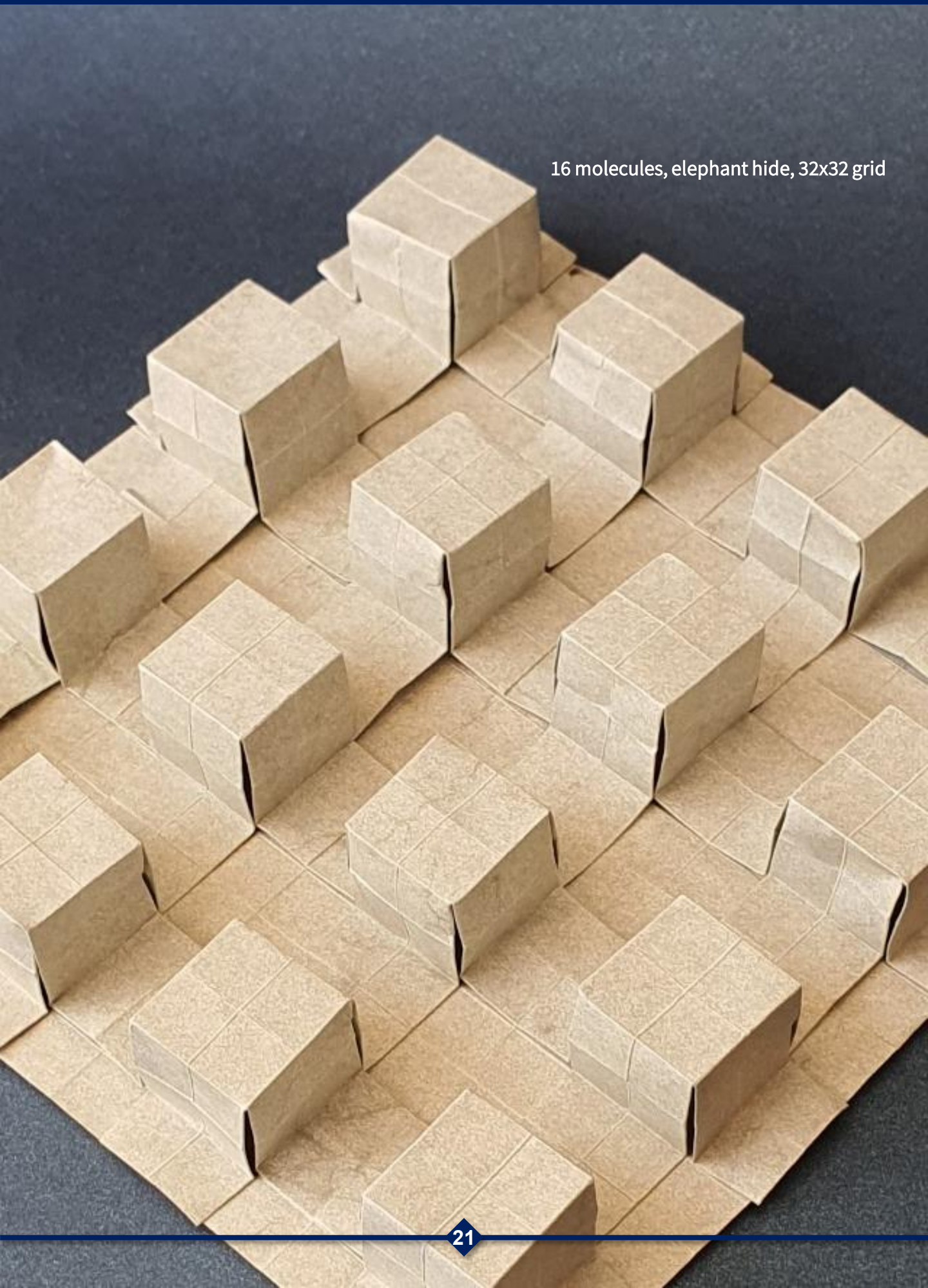
Connect the 3 **purple** dots.

3



Repeat step 3 on all other 3 corners connecting 3 dots of the same color. Repeat on the other 3 molecules.

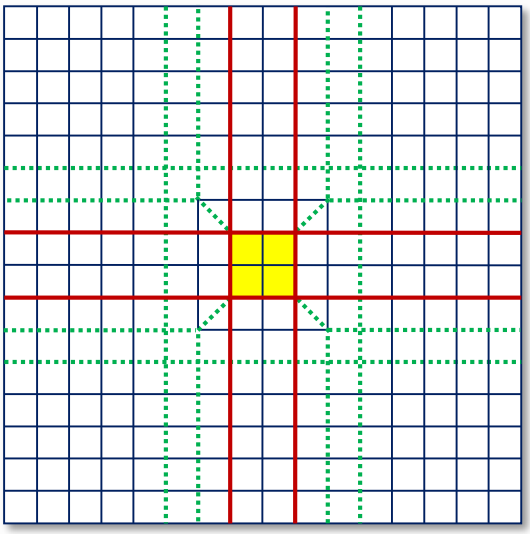




16 molecules, elephant hide, 32x32 grid

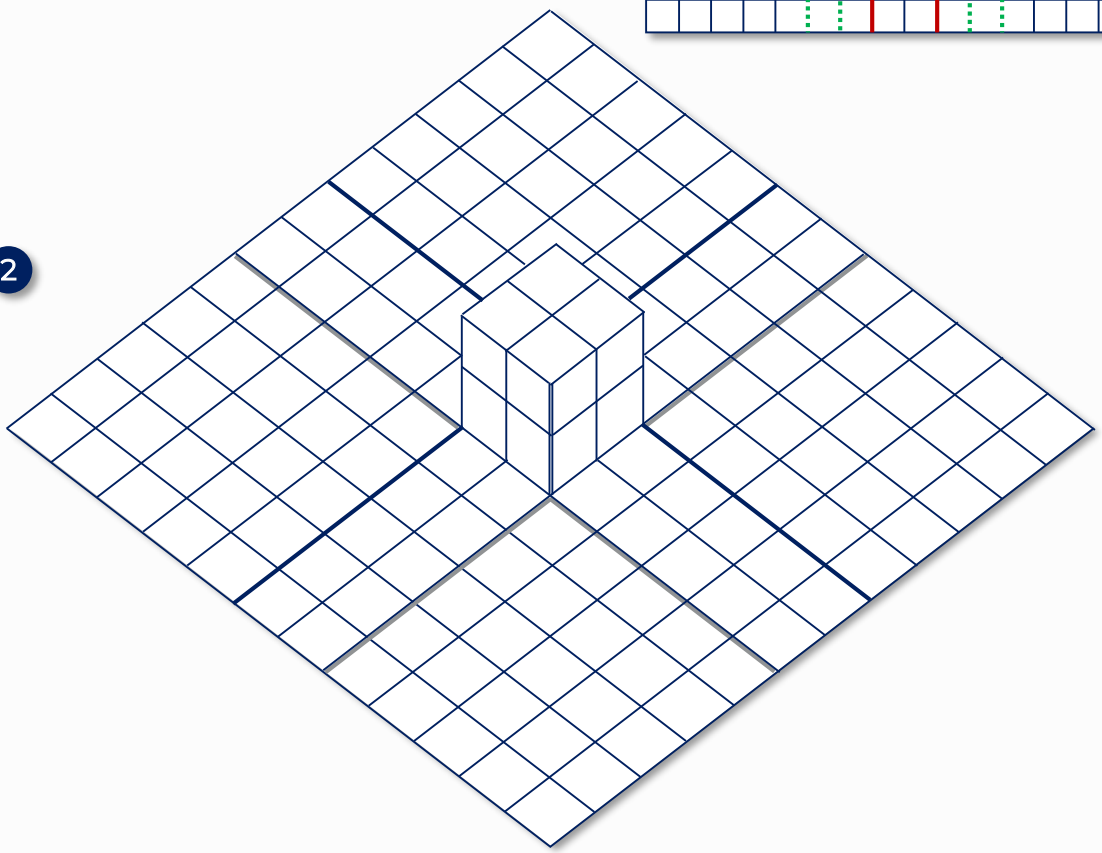
Pyramid

This model combines 2 molecules: a 2x2 molecule and a 4x4 molecule.



1. Start with a 8X8 grid, color side up.
The 2x2 molecule is marked in **yellow**.
Fold the **red** mountains and the **green** valleys.
Fold a single basic molecule.

2.



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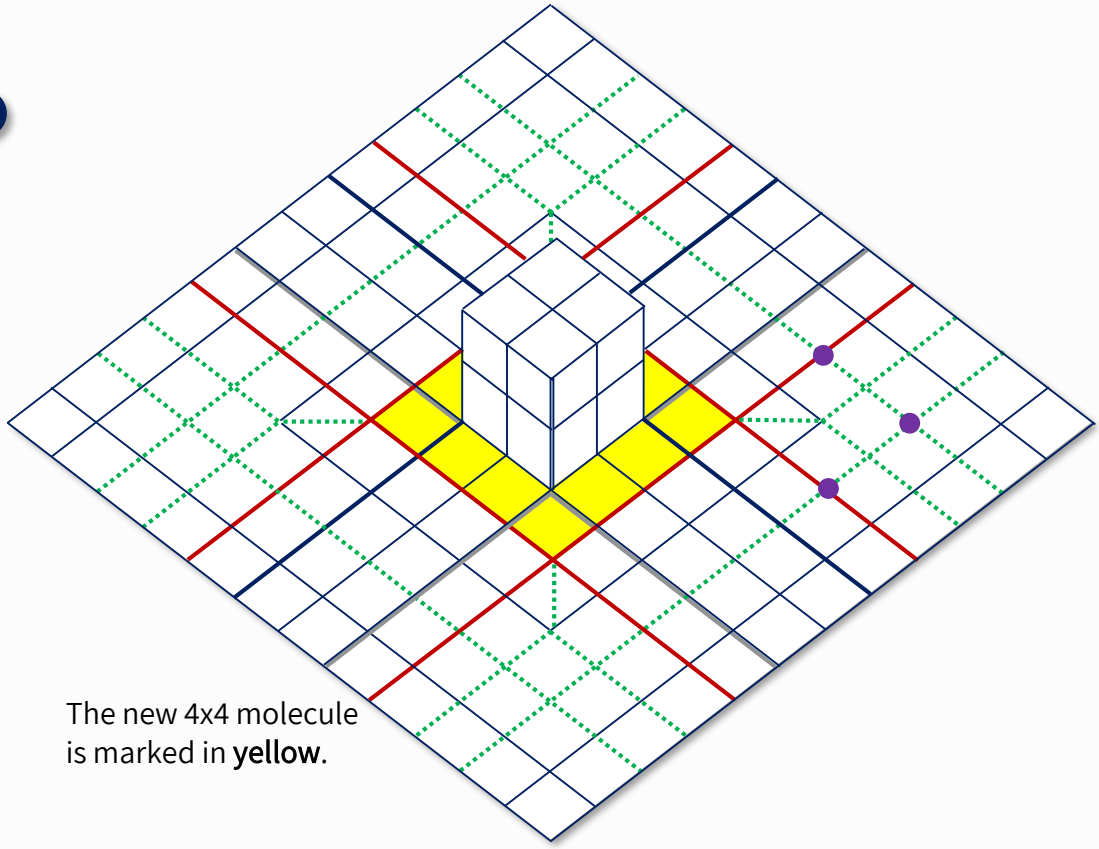
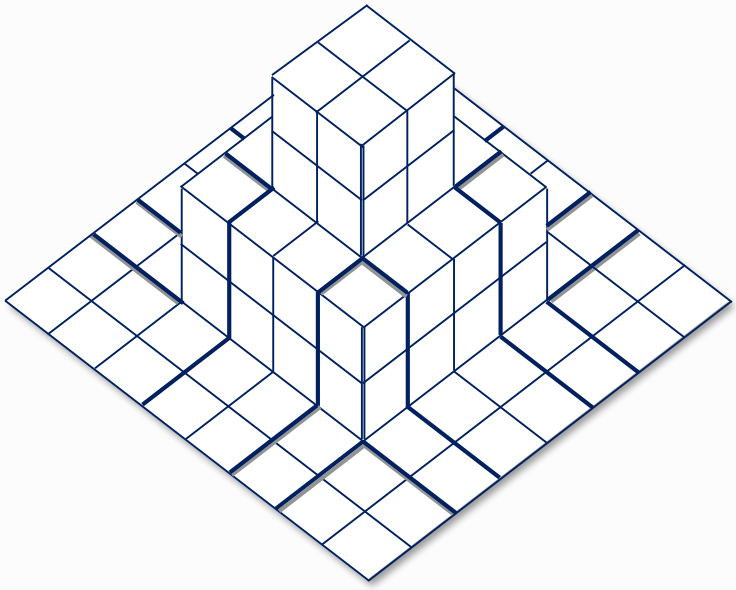


The new 4x4 molecule is marked in **yellow**.

4 Fold the **red** mountains and the **green** valleys.

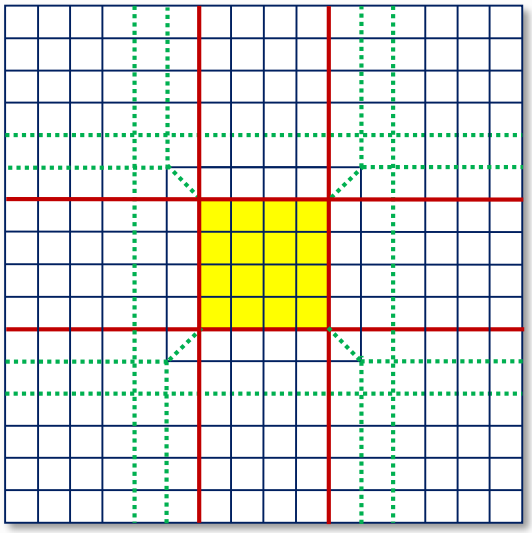
5 Connect the 3 **purple** dots.

6 Repeat step 5, on 3 other corners.



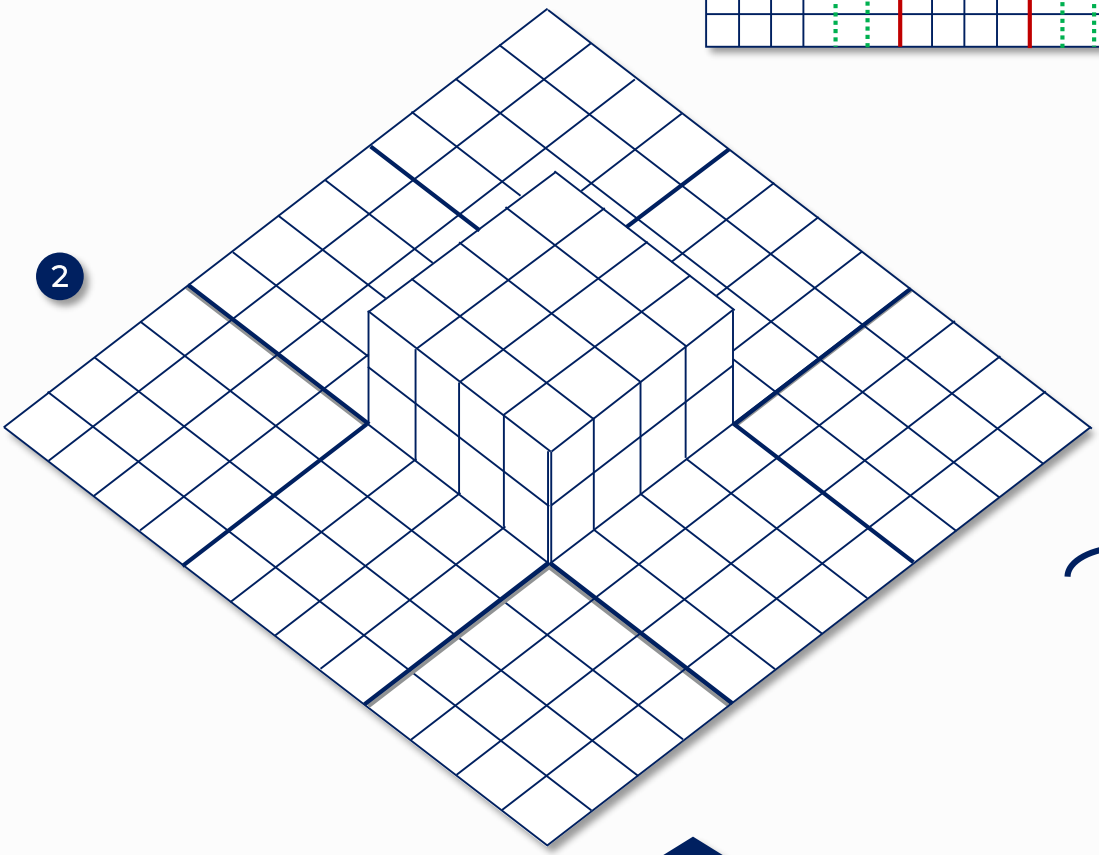
Well

This model combines 2 molecules: 4x4 molecule and, **on the other side of the paper,** a 6x6 molecule.



1. Start with a 16X16 grid, white side up.
The 4x4 molecule is marked in **yellow.**
Fold the **red** mountains and the **green** valleys.
Fold a single molecule.

2.



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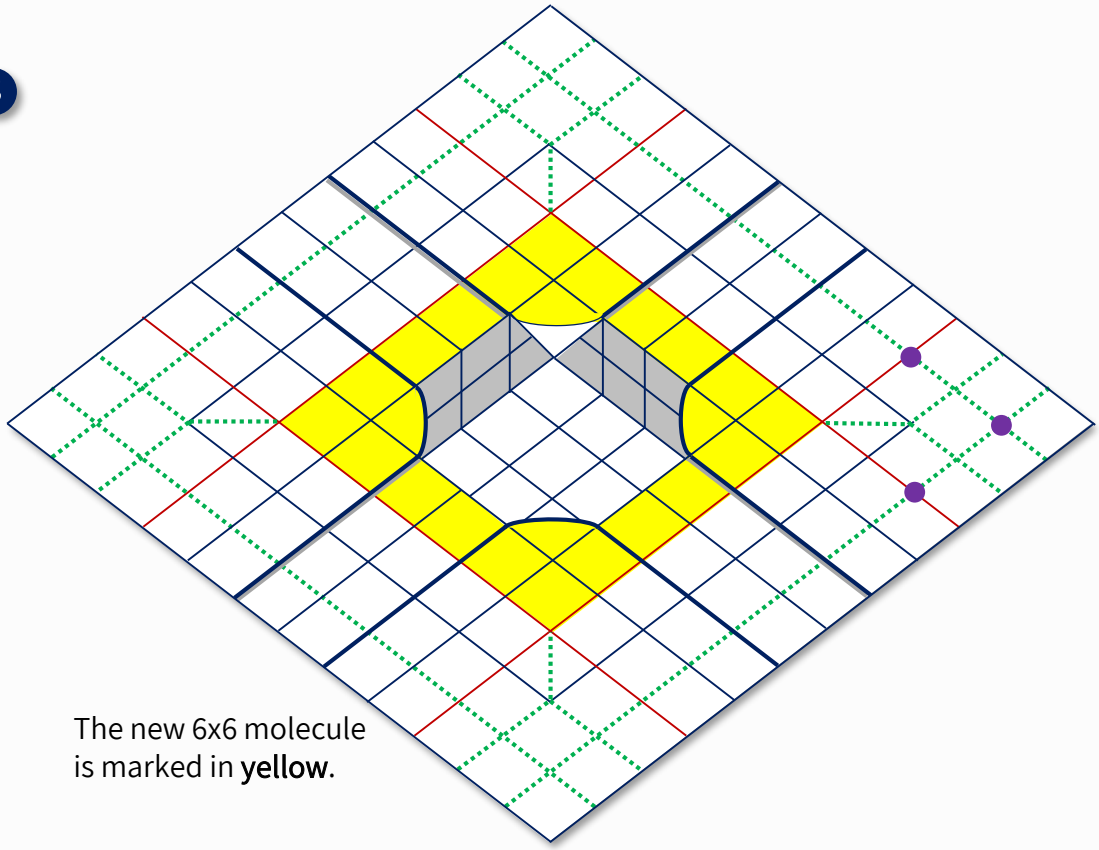
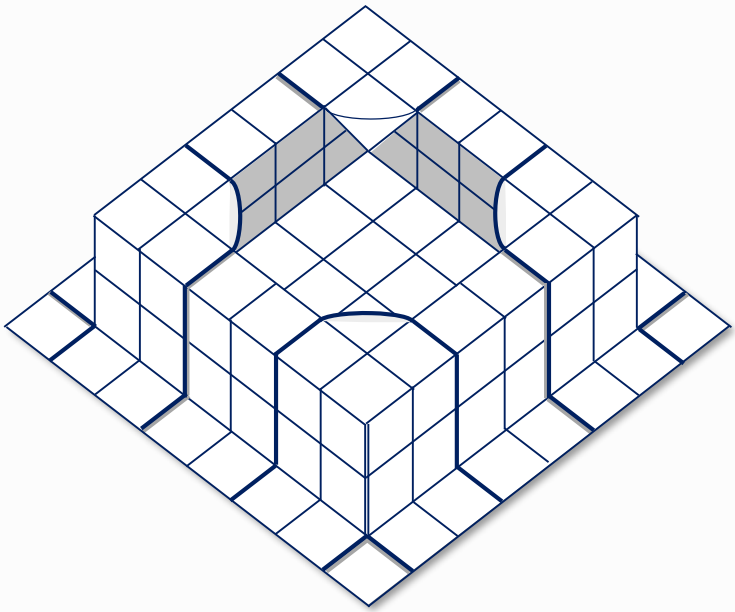


The new 6x6 molecule is marked in **yellow**.

4 Fold the **red** mountains and **green** valleys.

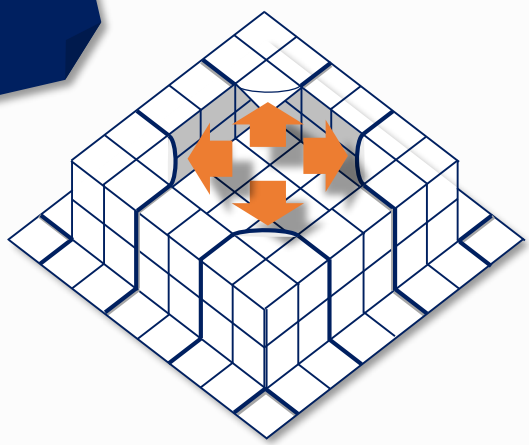
5 Connect the 3 **purple** dots.

6 Repeat step 5, on 3 other corners.



Inner Corner
(The dark side of the corner....)

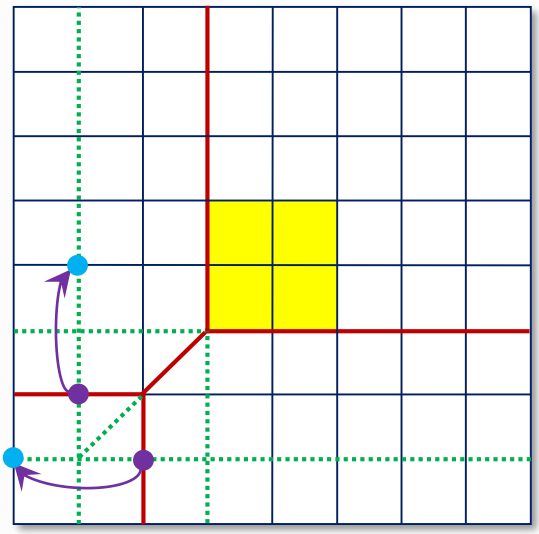
The method of corner folding works fine until we flip the model and the other side of the corners reviles.

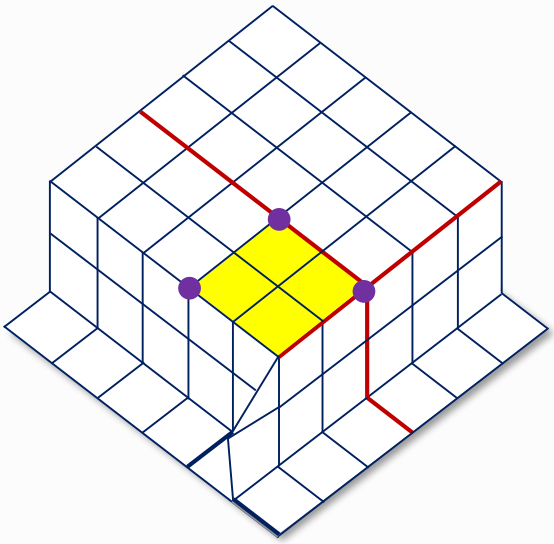


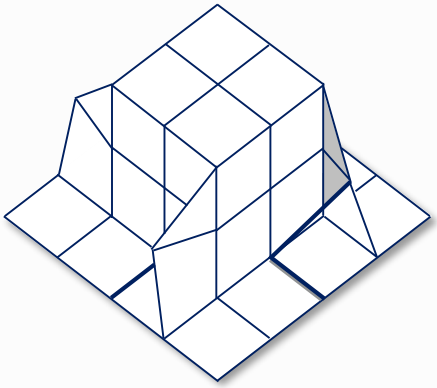
The '**inner corner**' refines the corners of the model.
From this point on in the book I will refer to the corners shown in the **previous** models as '**regular corners**'.

1. Start with a 8X8 grid.
The 2x2 molecule is marked in **yellow.**
Fold the **red** mountains and the **green** valleys.

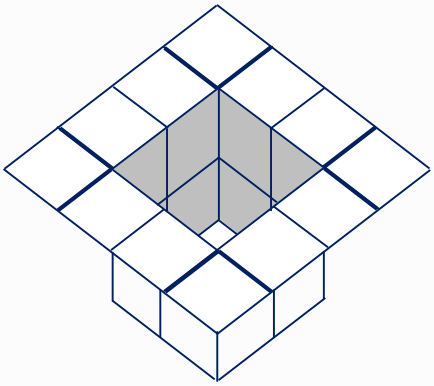
2. Pinch the 2 **purple** dots and fold the mountain lines to the **blue** dots.

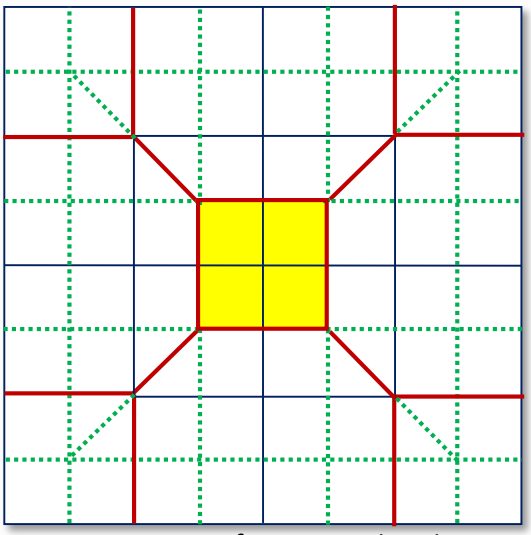




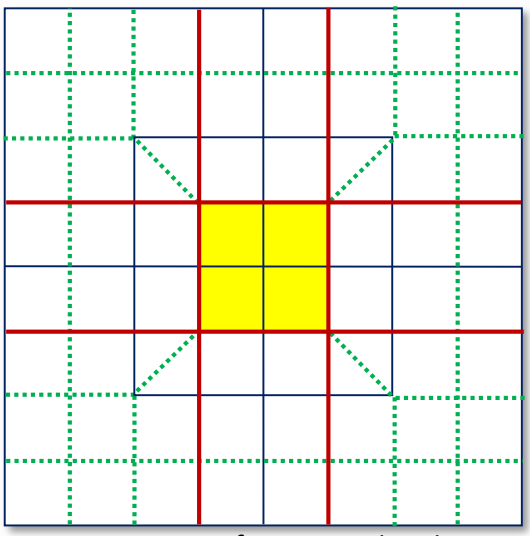


3 Repeat step 2, on 3 other corners (marked with **purple** dots).





A crease pattern for one molecule with '**inner corners**'.

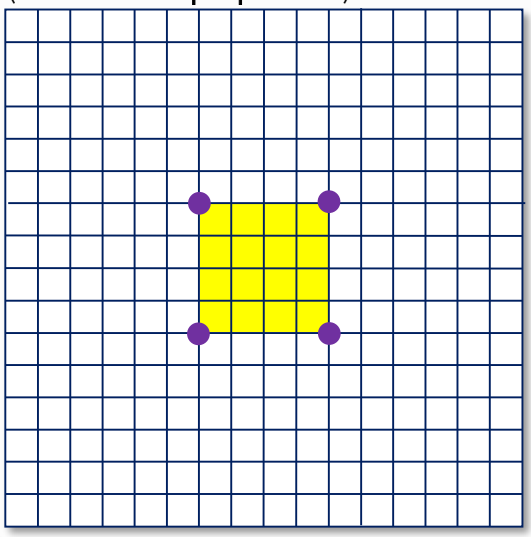


A crease pattern for one molecule with '**regular corners**'.

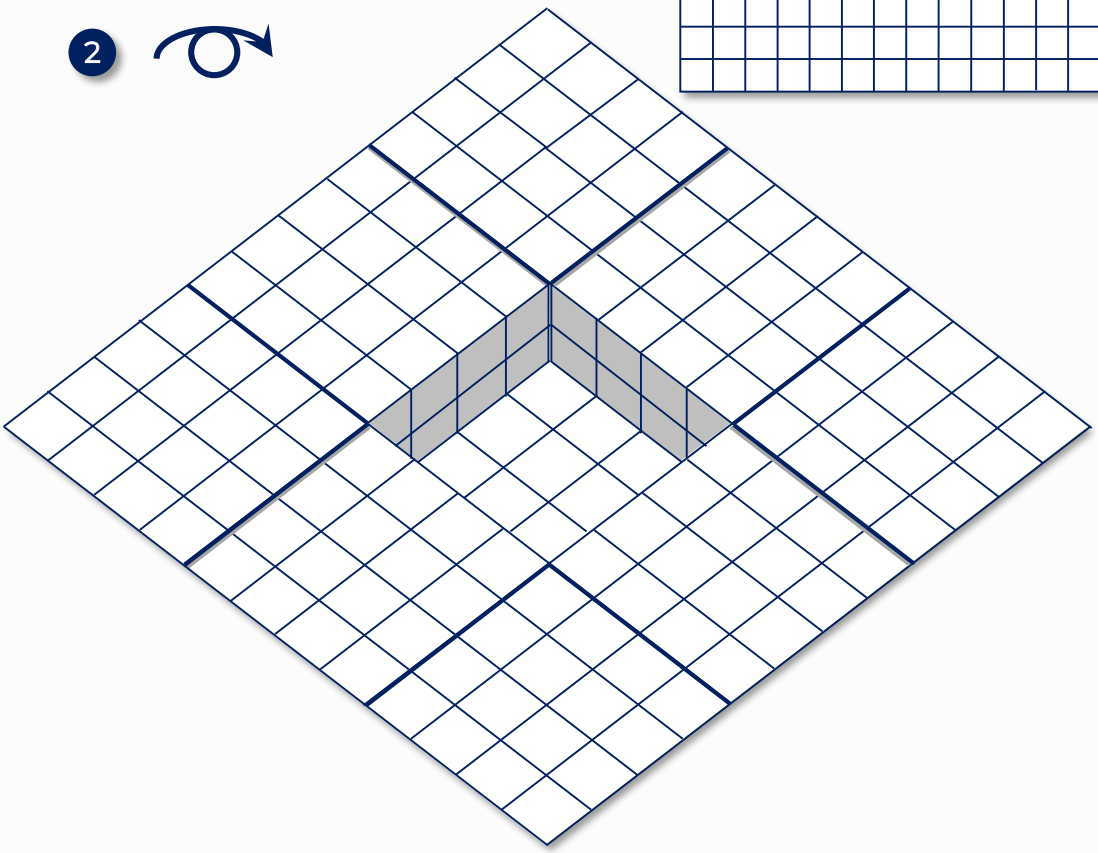
Well Designed Well

This model combines the '**inner corner**' for the first molecule, and a '**regular corner**' for the second one.

1. Start with a 16x16 grid, white side up. The 4x4 molecule is marked in **yellow.** Fold '**inner corners**' on all 4 corners (marked with **purple** dots).



2.



3 The new 6x6 molecule is marked in **yellow.**
Fold '**regular corners**' on all 4 corners
(marked with **purple** dots).