

the **BIG BANG THEORY**™

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THE BIG **BANG** THEORY

Drs. Leonard Hofstadter and Sheldon Cooper are brilliant physicists – geniuses in the laboratory, but socially challenged everywhere else. Enter beautiful, street-smart neighbor, Penny, who aims to teach them a thing or two about life. Despite their on-again, off-again relationship in the past, Leonard and Penny have finally gotten engaged. Even Sheldon has found a female companion – entering into a “Relationship Agreement” with neuroscientist Amy Farrah Fowler. In their free time, Leonard and

Sheldon enjoy fantasy role-playing games with their ever-expanding universe of friends, including fellow scientists Rajesh Koothrappali, Howard Wolowitz, and Howard’s adorable microbiologist wife, Bernadette.

Set in Pasadena, California, *The Big Bang Theory* was created by Chuck Lorre and Bill Prady, who are executive producers along with showrunner Steven Molaro. The series premiered on CBS in 2007 and is currently in its eighth successful season.





LEONARD

Leonard is an experimental physicist with an IQ of 173 who received his PhD at the age of 24. Originally from New Jersey, Leonard comes from a family of accomplished scientists. His mother is a world-renowned psychiatrist, his father is an anthropologist, his brother is an attorney who's argued cases before the Supreme Court, and his sister is a biologist. Leonard shares an apartment with his friend and colleague Sheldon Cooper.



SHELDON

He's a smart guy. Originally from East Texas and a child prodigy, he started college at the age of 11 and received his first doctorate at age 16. Today, he's a top theoretical physicist at Caltech. Sheldon's great loves are science and science fiction, although he has now entered into a "Relationship Agreement" with his girlfriend, neurobiologist Amy Farrah Fowler.



PENNY

Penny is Leonard and Sheldon's street-smart neighbor from across the hallway. Outgoing and self-assured, Penny's personality often contrasts with that of the guys. Originally from a small town in Nebraska, she worked as a waitress at a local restaurant while aspiring to become an actress. Now she has a job as a sales representative with a pharmaceutical company and is engaged to Leonard. Penny is also good friends with Amy and Bernadette, and the three of them often hang out in Penny's apartment.



AMY

Amy is a neuroscientist with a PhD in neurobiology and Sheldon's girlfriend. They share many of the same traits, both being extremely rational and sometimes awkward in social situations, so much so that Sheldon has created a 31-page "Relationship Agreement" for them. Amy is also best friends with Penny and Bernadette, who have helped her fit in better – more or less.



RAJ

Originally from New Delhi, India, Raj is Howard Wolowitz's best friend. He works as an astrophysicist at Caltech where he specializes in particle astrophysics. Like his friends, Raj is passionate about science fiction and comic books, and is also a big fan of Harry Potter. Raj's one claim to fame is that he once discovered a planetary object beyond the Kuiper Belt. Though much more confident than he used to be, he is still very shy around girls.



HOWARD

Howard is an aerospace engineer at Caltech's Department of Applied Physics with a master's in engineering from MIT. Unlike Leonard, Sheldon, and Raj, Howard has no doctorate, preferring the practical endeavors of engineering to the theoretical work of his friends. His skills as an engineer eventually allow him to fulfill his dream of becoming an astronaut. Howard marries his girlfriend, Bernadette, shortly before he leaves on his mission to visit the International Space Station.



BERNADETTE

Bernadette is a microbiologist and also Howard Wolowitz's wife. She became friends with the others while waitressing at the same restaurant as Penny to pay for her graduate studies in microbiology. Though generally friendly and good-natured, she can also be quite intimidating when she has to be. While Bernadette claims she can safely handle the world's most dangerous viruses, not all her experiments in the laboratory end successfully – as her time in quarantine demonstrates.



THE BIG BANG THEORY

Les scientifiques Leonard Hofstadter et Sheldon Cooper sont de brillants physiciens, des génies dans un laboratoire, mais ils ne sont pas très doués pour les interactions sociales. Arrive une belle voisine débrouillarde, Penny, qui souhaite leur enseigner une chose ou deux sur la vie. La relation entre Leonard et Penny a connu des hauts et des bas par le passé, mais ils ont fini par se fiancer. Même Sheldon a trouvé une compagne, passant un « contrat relationnel » avec la neuroscientifique Amy Farrah Fowler. Pendant leurs temps libres, Leonard et Sheldon aiment s'amuser à des jeux de rôle fantastiques avec leur groupe d'amis en constante expansion, comprenant

leurs collègues scientifiques Rajesh Koothrappali et Howard Wolowitz avec son adorable femme microbiologiste, Bernadette.

Située à Pasadena, en Californie, la série *The Big Bang Theory* a été créée par Chuck Lorre et Bill Prady, qui sont les producteurs exécutifs, avec l'auteur-producteur de la série, Steven Molaro. La série à succès a fait ses débuts sur le réseau CBS en 2007 et en est actuellement à sa huitième saison.



LEONARD

Leonard est un physicien expérimental avec un QI de 173 qui a obtenu son doctorat à l'âge de 24 ans. Originaire du New Jersey, Leonard vient d'une famille de scientifiques accomplis.

Sa mère est une psychiatre de renommée mondiale, son père est anthropologue, son frère est un avocat qui a plaidé devant la Cour suprême et sa sœur est biologiste. Leonard partage un appartement avec son ami et collègue Sheldon Cooper.



SHELDON

C'est un gars intelligent. Originaire du Texas de l'Est et enfant prodige, il a commencé l'université à l'âge de 11 ans et reçu son premier doctorat à l'âge de 16 ans. Il est aujourd'hui un

physicien théorique de haut niveau à l'université de Caltech. Les grandes passions de Sheldon sont la science et la science-fiction, même s'il a maintenant passé un « contrat relationnel » avec sa petite amie, la neurobiologiste Amy Farrah Fowler.



PENNY

Penny est la voisine débrouillarde de Leonard et Sheldon qui habite de l'autre côté du couloir. Sa personnalité sociable et pleine d'assurance contraste souvent avec celle des garçons. Originaire

d'une petite ville du Nebraska, Penny a travaillé comme serveuse dans un restaurant local en espérant devenir actrice. Elle travaille maintenant comme représentante pour une entreprise pharmaceutique et est fiancée à Leonard. Penny est aussi amie avec Amy et Bernadette, et les trois se réunissent souvent dans l'appartement de Penny.



AMY

Amy est une neuroscientifique avec un doctorat en neurobiologie et la petite amie de Sheldon. Ils se ressemblent beaucoup, les deux étant extrêmement rationnels et parfois

maladroits dans les situations sociales, à tel point que Sheldon a créé pour eux un « contrat relationnel » de 31 pages. Amy est aussi très amie avec Penny et Bernadette, qui l'ont aidée à mieux s'intégrer, enfin plus ou moins.



RAJ

Originaire de New Delhi, en Inde, Raj est le meilleur ami d'Howard Wolowitz. Il travaille comme astrophysicien à Caltech, spécialisé dans l'astrophysique des particules.

Comme ses amis, Raj est passionné de science-fiction et de bandes dessinées et il est aussi un grand fan d'Harry Potter. Raj est célèbre pour avoir découvert un objet planétaire au-delà de la ceinture de Kuiper. Il a beaucoup plus confiance en lui que par le passé, mais il est toujours très timide avec les filles.



HOWARD

Howard est un ingénieur aérospatial du département de physique appliquée de Caltech qui possède une maîtrise en ingénierie de MIT. Contrairement à Leonard, Sheldon, et Raj, Howard n'a pas de doctorat, préférant les applications pratiques de l'ingénierie au travail théorique de ses amis. Ses compétences d'ingénieur lui permettent finalement de réaliser son rêve de devenir astronaute. Howard épouse sa petite amie, Bernadette, peu avant de partir en mission pour visiter la station spatiale internationale.



BERNADETTE

Bernadette est une microbiologiste et la femme d'Howard Wolowitz. Elle est devenue amie avec les autres en servant dans le même restaurant que Penny pour payer ses études

supérieures en microbiologie. Elle est généralement sympathique et gentille, mais elle peut aussi être assez intimidante quand il le faut. Bernadette prétend qu'elle peut manipuler en toute sécurité les virus les plus dangereux du monde, mais certaines de ses expériences dans le laboratoire ne se terminent pas toujours bien, comme le prouve le temps qu'elle passe en quarantaine.



THE BIG BANG THEORY

Los doctores Leonard Hofstadter y Sheldon Cooper son físicos brillantes; genios en el laboratorio, pero socialmente ineptos en cualquier otro campo. Y ahí es cuando entra Penny, una chica lista que trata de enseñarles un par de cosas sobre la vida real. A pesar de sus idas y venidas sentimentales, Leonard y Penny se han comprometido finalmente. Incluso Sheldon ha encontrado una compañera, accediendo a establecer un «acuerdo de relación» con la neurocientífica Amy Farrah Fowler. En su tiempo libre, Leonard y Sheldon disfrutan jugando juegos de rol en mundos fantásticos con su siempre

divertido universo de amigos, del que forman parte los científicos Rajesh Koothrappali, Howard Wolowitz y Bernadette, adorable microbióloga y esposa de Howard.

Con Pasadena (California) como telón de fondo, *The Big Bang Theory* fue creada por Chuck Lorre y Bill Prady (productores ejecutivos junto al *showrunner* Steven Molaro). La serie se estrenó en el canal CBS en 2007. Actualmente atraviesa su octava temporada y continúa gozando de gran éxito.





LEONARD

Leonard es un físico experimental con un cociente intelectual de 173 que obtuvo su doctorado a los 24 años. Nacido en Nueva Jersey, Leonard descende de una familia de científicos muy comprometidos. Su madre es una psiquiatra mundialmente conocida, su padre es antropólogo, su hermano es un reputado abogado que ha ganado numerosos casos frente al Tribunal Supremo y su hermana es bióloga. Leonard comparte apartamento con su amigo y colega Sheldon Cooper.



PENNY

Penny es una chica lista que vive frente a la casa de Leonard y Sheldon. Extrovertida y segura, la personalidad de Penny choca con frecuencia con la de los chicos. Nacida en una pequeña ciudad de Nebraska, trabajó como mesera en un restaurante local mientras intentaba convertirse en actriz. Hoy es representante comercial de una empresa farmacéutica y está comprometida con Leonard. Penny es también muy amiga de Amy y Bernadette, con quienes suele reunirse en su apartamento.



SHELDON

Es un chico inteligente. Niño prodigio nacido al este de Texas, entró en el instituto a los 11 años y recibió su primer doctorado a los 16. Hoy es uno de los mejores físicos teóricos del instituto Caltech. Los grandes amores de Sheldon son la ciencia y la ciencia ficción, aunque ahora ha accedido a un «acuerdo de relación» con su novia, la neurobióloga Amy Farrah Fowler.



AMY

Amy es neurocientífica, posee un doctorado en neurobiología y es la novia de Sheldon. Comparten muchos rasgos: ambos son extremadamente racionales y en ocasiones algo ineptos en situaciones sociales (tanto que Sheldon ha creado un «acuerdo de relación» de 31 páginas para los dos). Amy es también muy amiga de Penny y Bernadette, quienes la han ayudado a encajar (más o menos).



RAJ

Procedente de Nueva Delhi (India), Raj es el mejor amigo de Howard Wolowitz. Trabaja como astrofísico en el instituto Caltech, donde es especialista en astrofísica de partículas. Al igual que sus amigos, Raj es un apasionado de la ciencia ficción y los cómics, y también un gran fan de Harry Potter. Uno de los motivos por los que Raj podría ser famoso es que descubrió un objeto planetario más allá del cinturón de Kuiper. Aunque ahora se siente mucho más cómodo que antes con las chicas, todavía es bastante tímido cuando tiene que relacionarse con ellas.



BERNADETTE

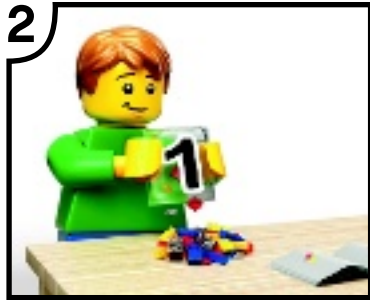
Bernadette es microbióloga y está casada con Howard Wolowitz. Conoció a todos los demás mientras era mesera en el mismo restaurante que Penny, donde trabajaba para pagar su graduado en microbiología. Aunque suele ser simpática y amable, también puede intimidar cuando es necesario. Bernadette dice que puede manipular con seguridad los virus más peligrosos del mundo, pero no todos sus experimentos de laboratorio terminan bien (como demuestra el tiempo que pasó en cuarentena).



HOWARD

Howard es ingeniero aeroespacial en el departamento de física aplicada del instituto Caltech y posee una maestría en ingeniería por el MIT. A diferencia de Leonard, Sheldon y Raj, Howard no tiene un doctorado ya que prefiere las labores prácticas de la ingeniería al trabajo teórico de sus amigos. Sus conocimientos de ingeniería le permiten cumplir su sueño de convertirse en astronauta. Howard se casó con su novia, Bernadette, poco antes de emprender su misión de visitar la Estación Espacial Internacional.





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$$\frac{-m+1}{(p-2)^2}$$

$$\frac{p^3}{F(p)(p-2)^m}$$

(n-2)!!

(n-1)!

$\frac{1}{2}P^2$

(1)P

(1)P

(1)P

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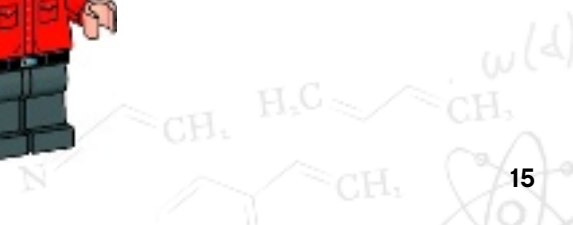
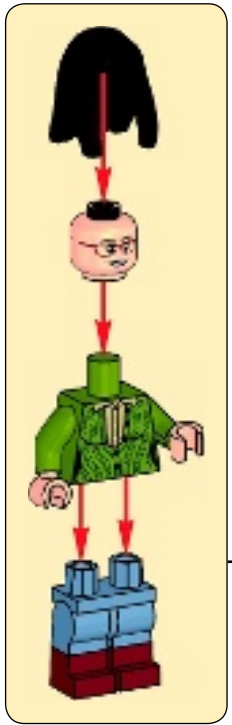
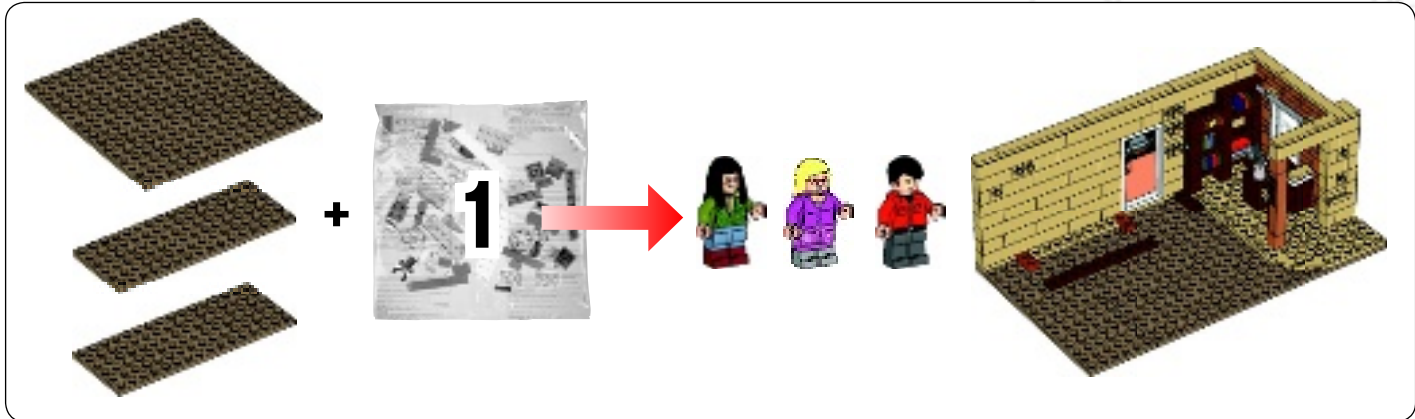
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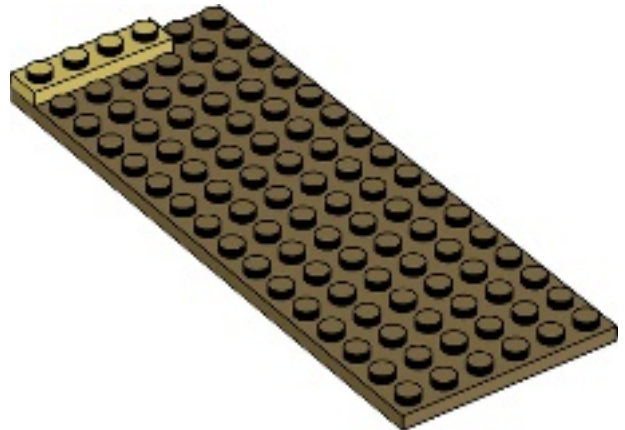
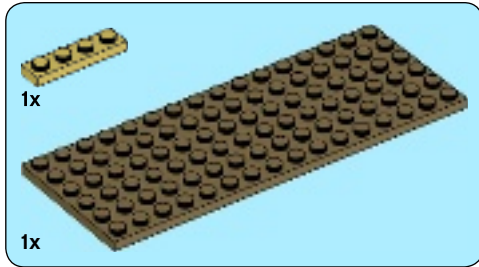
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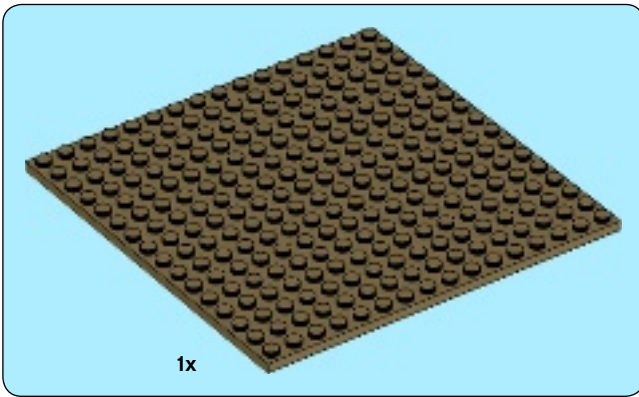




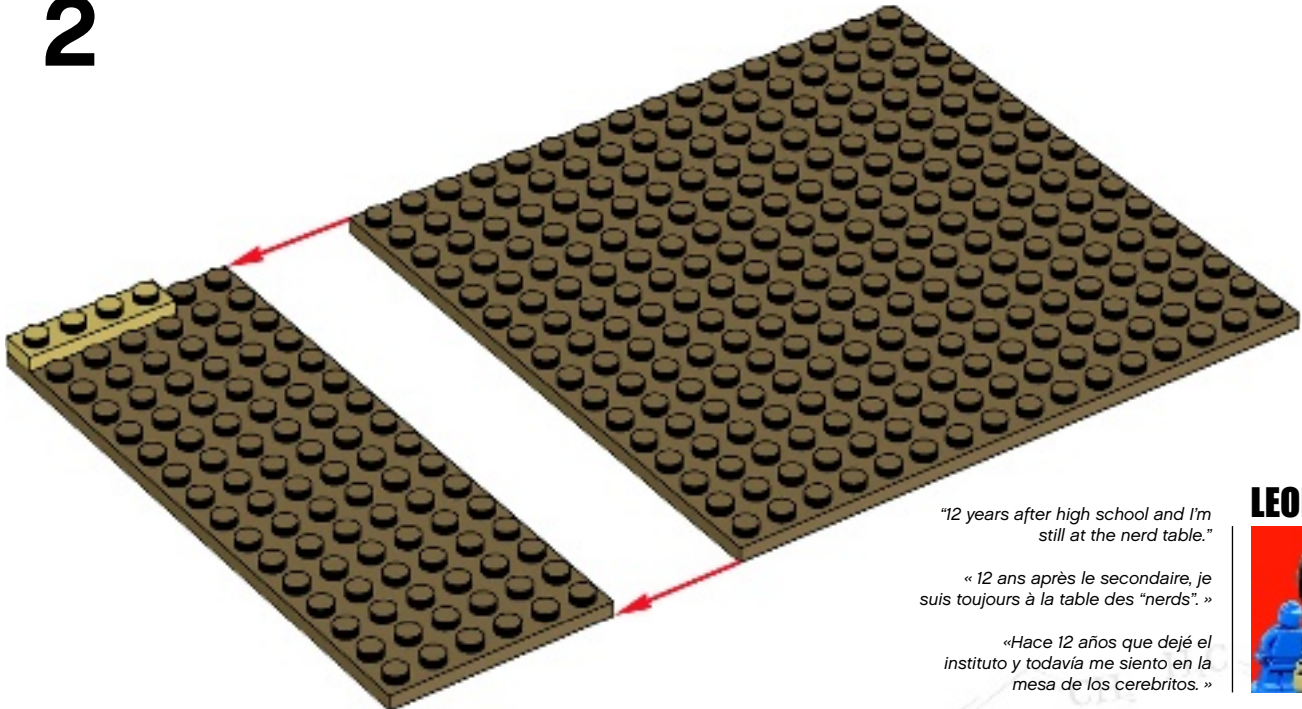
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$$\frac{p^{m+1} - p^{m+1}}{(p-2)^m} ;$$

$$\frac{p^3}{F(p)(p-2)^m} ;$$



2



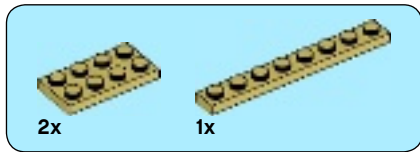
"12 years after high school and I'm still at the nerd table."

« 12 ans après le secondaire, je suis toujours à la table des "nerds". »

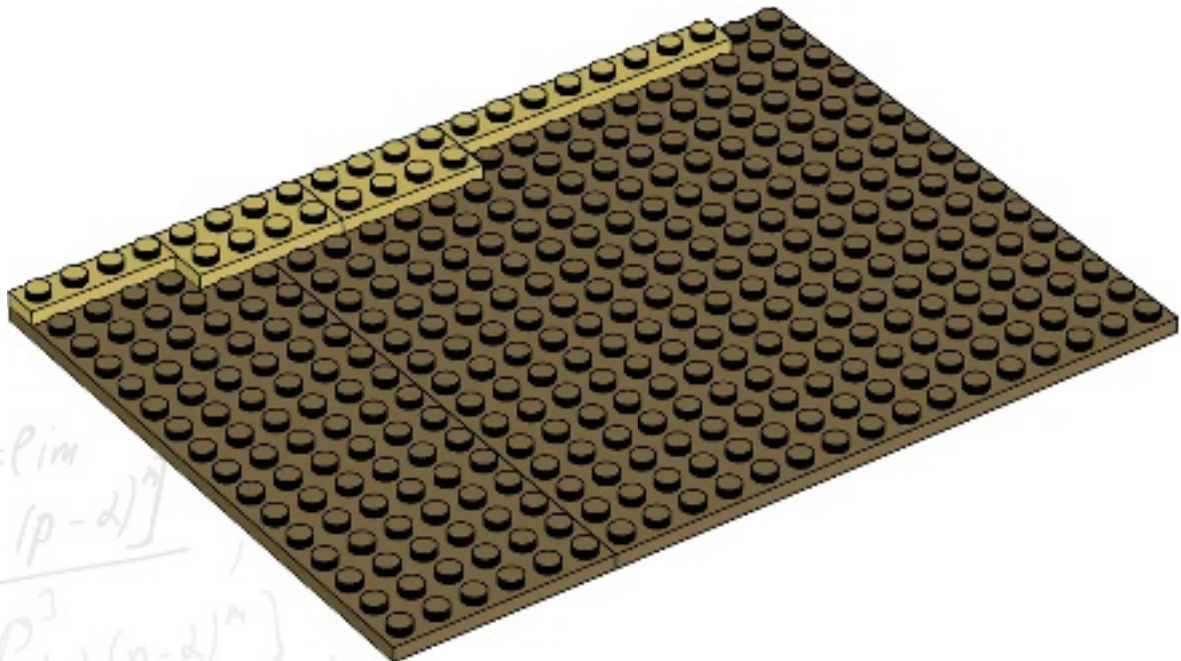
«Hace 12 años que dejé el instituto y todavía me siento en la mesa de los cerebritos. »

LEONARD

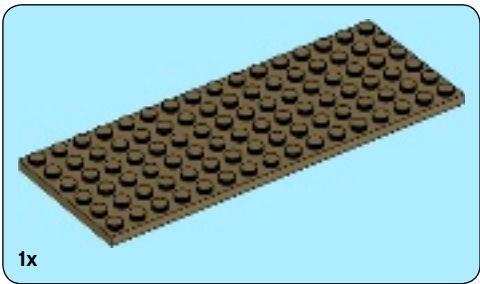




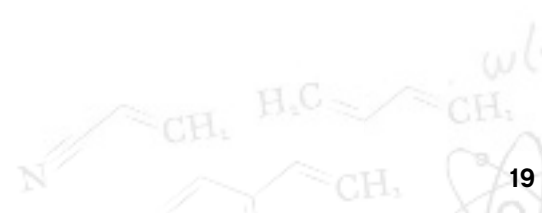
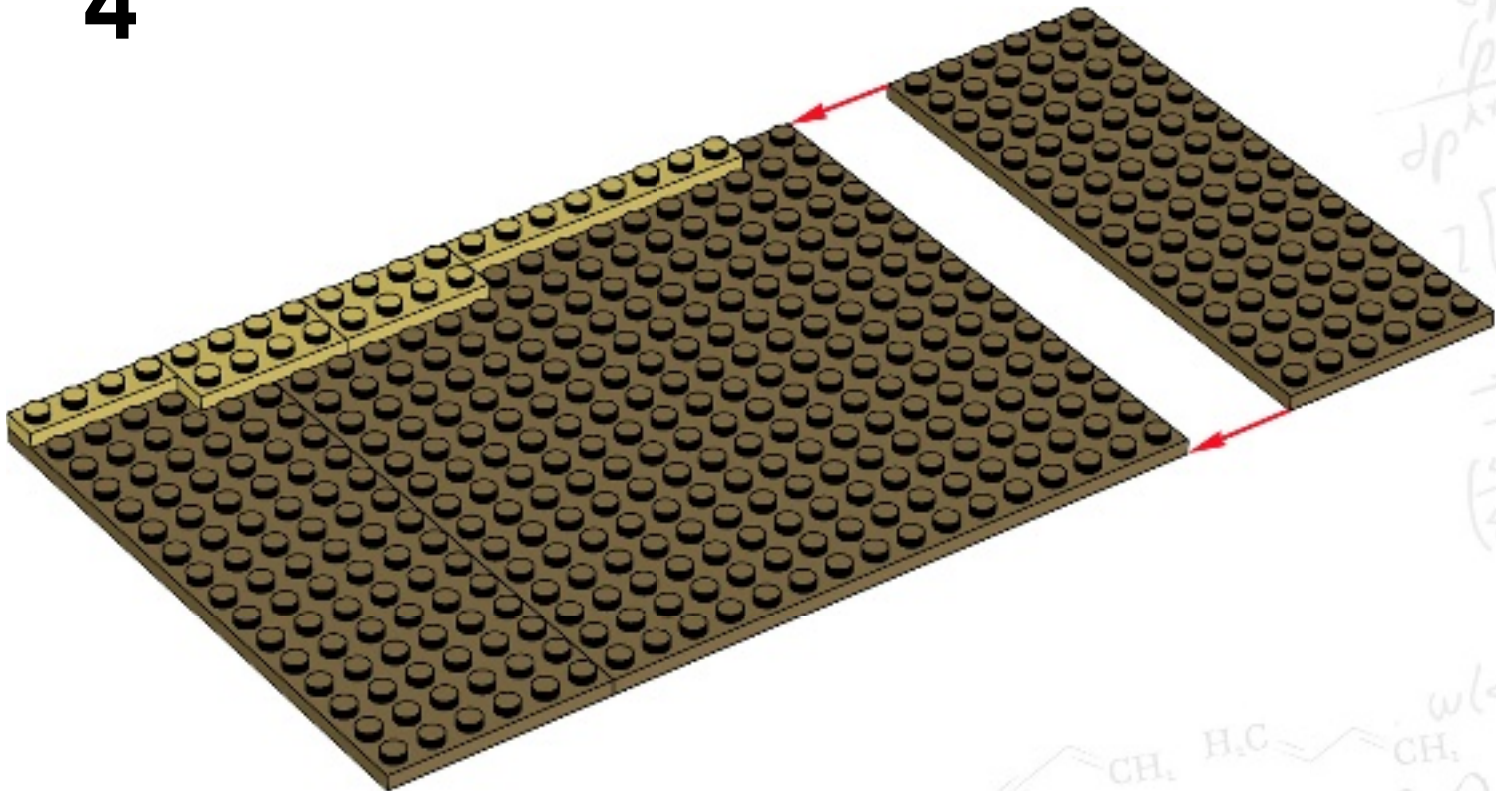
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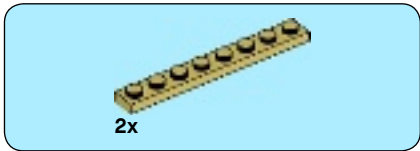


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-m+1 = p im
 $(p-2)^m$
 p^2
 $F(p)(p-2)^m$

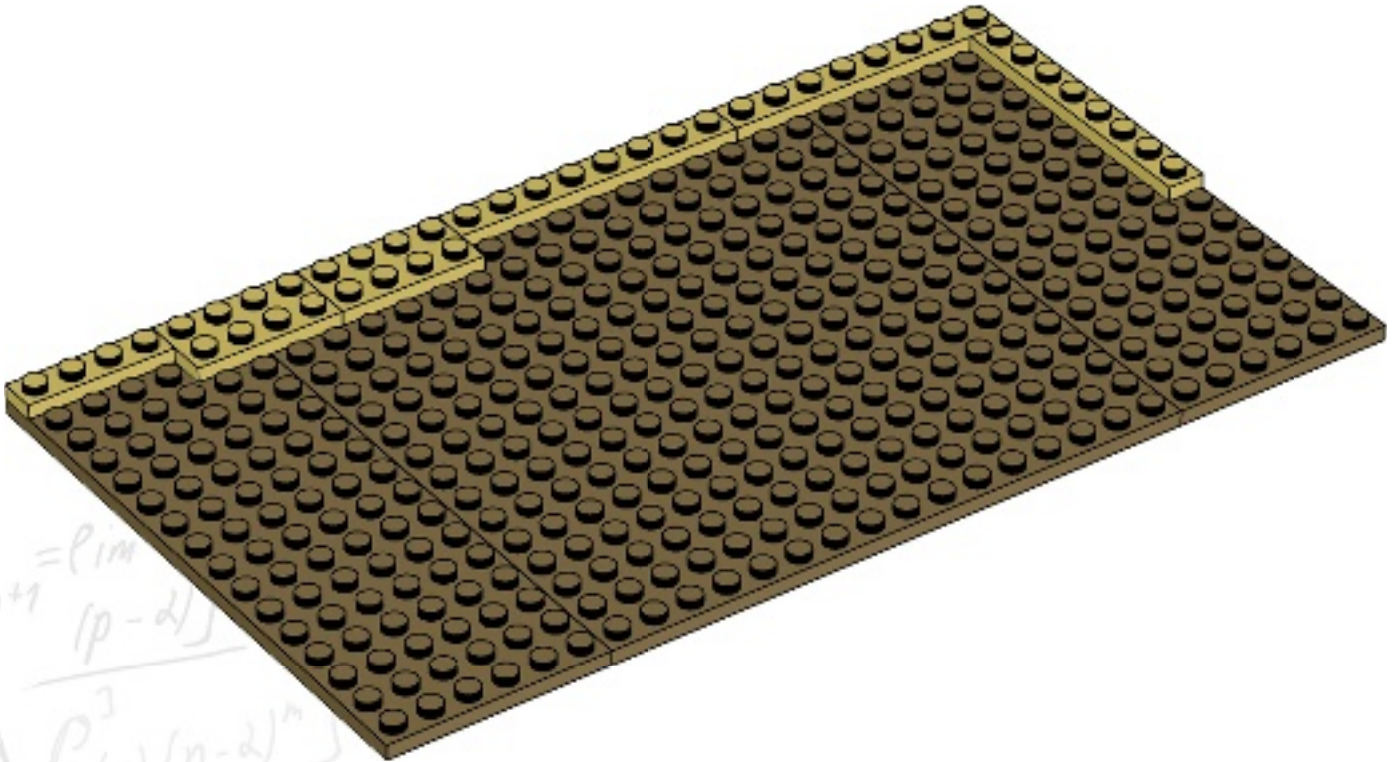


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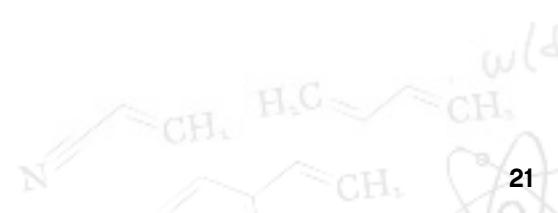
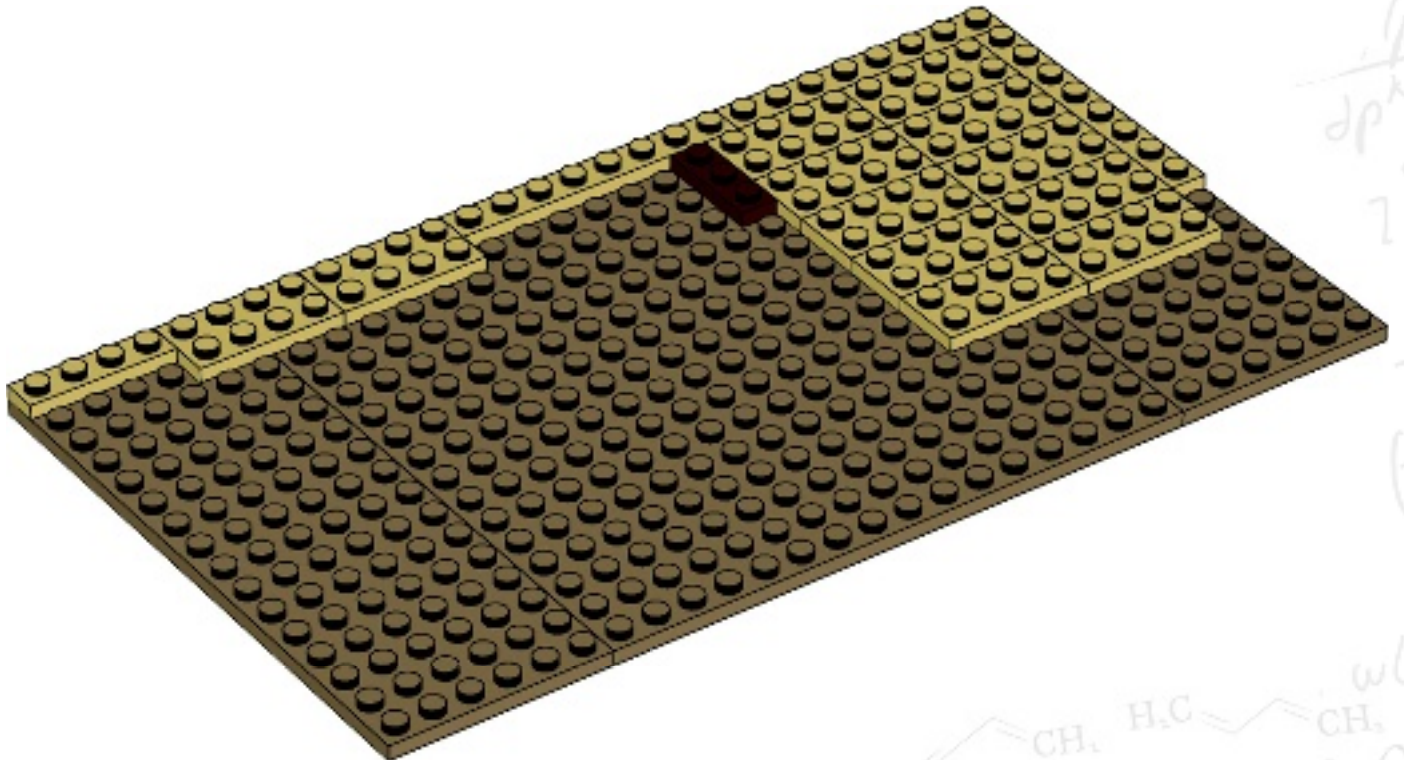


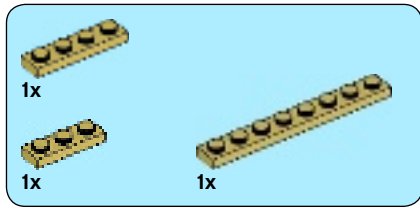
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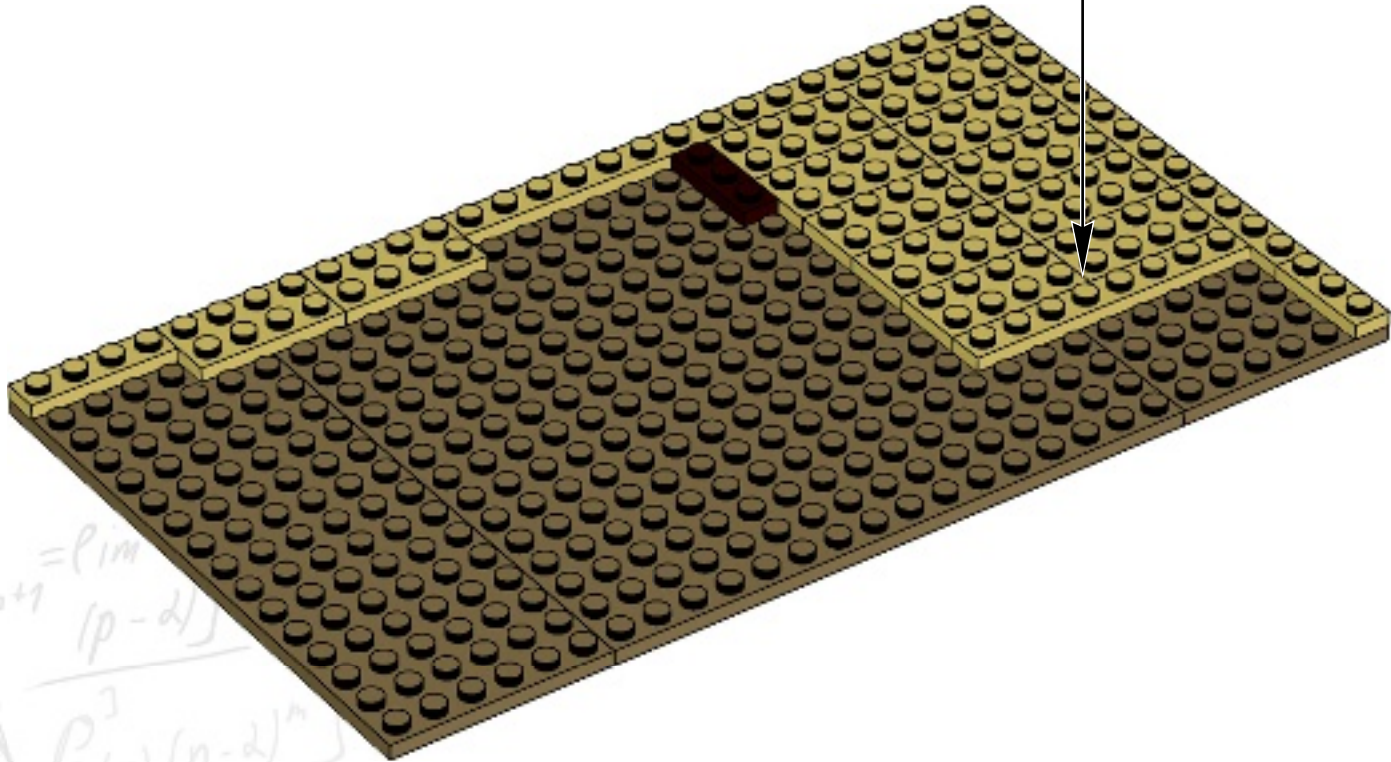
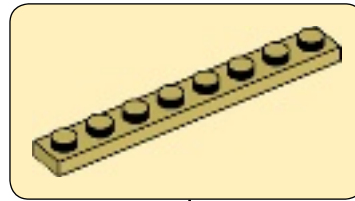


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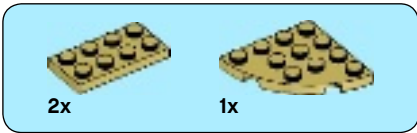




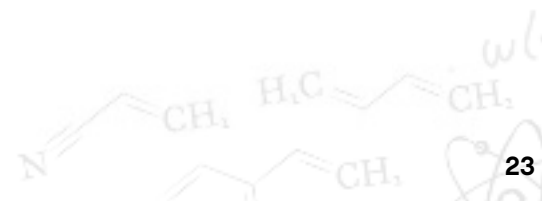
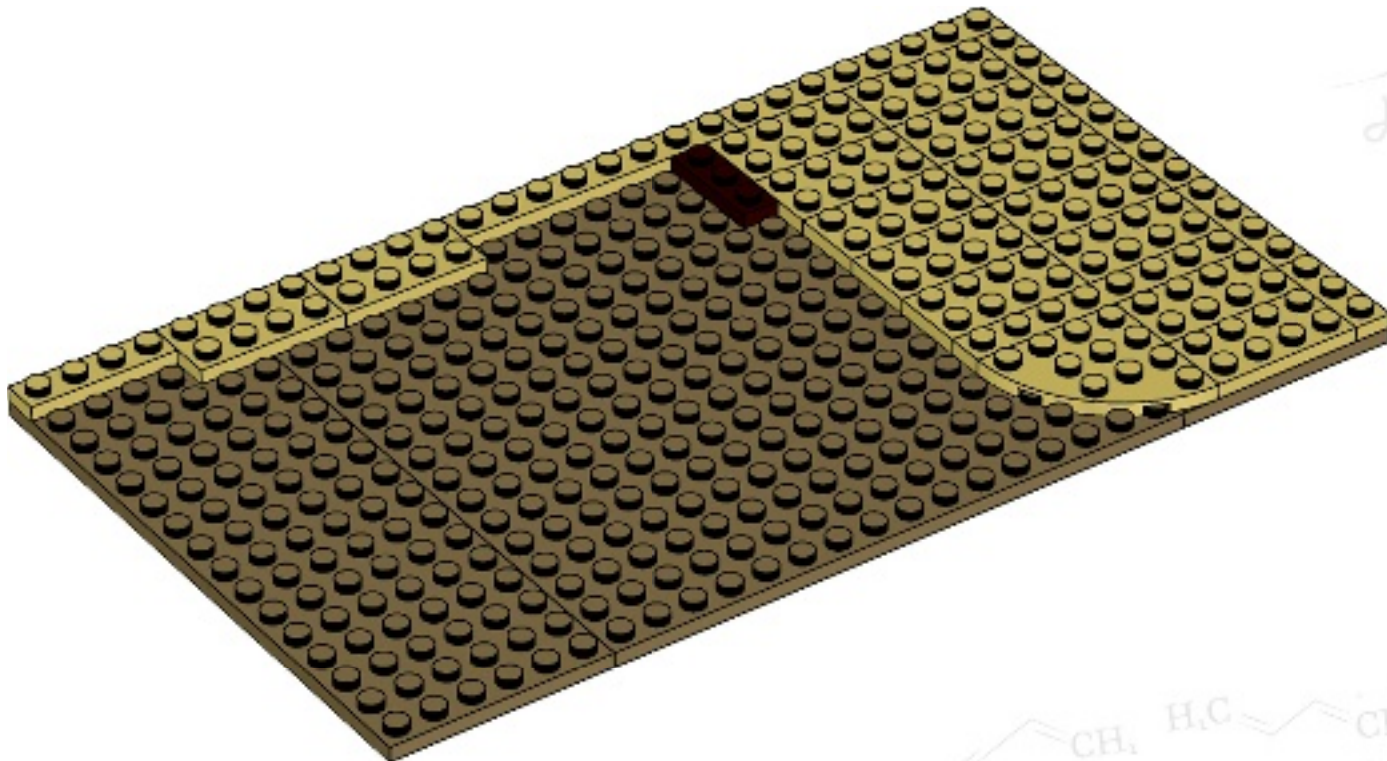
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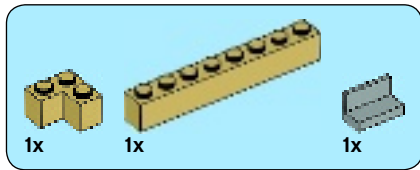


2
 $= p \cdot m$
 $-m+1$
 $(p-2)$
 p^3
 $F(p)(p-2)^m$

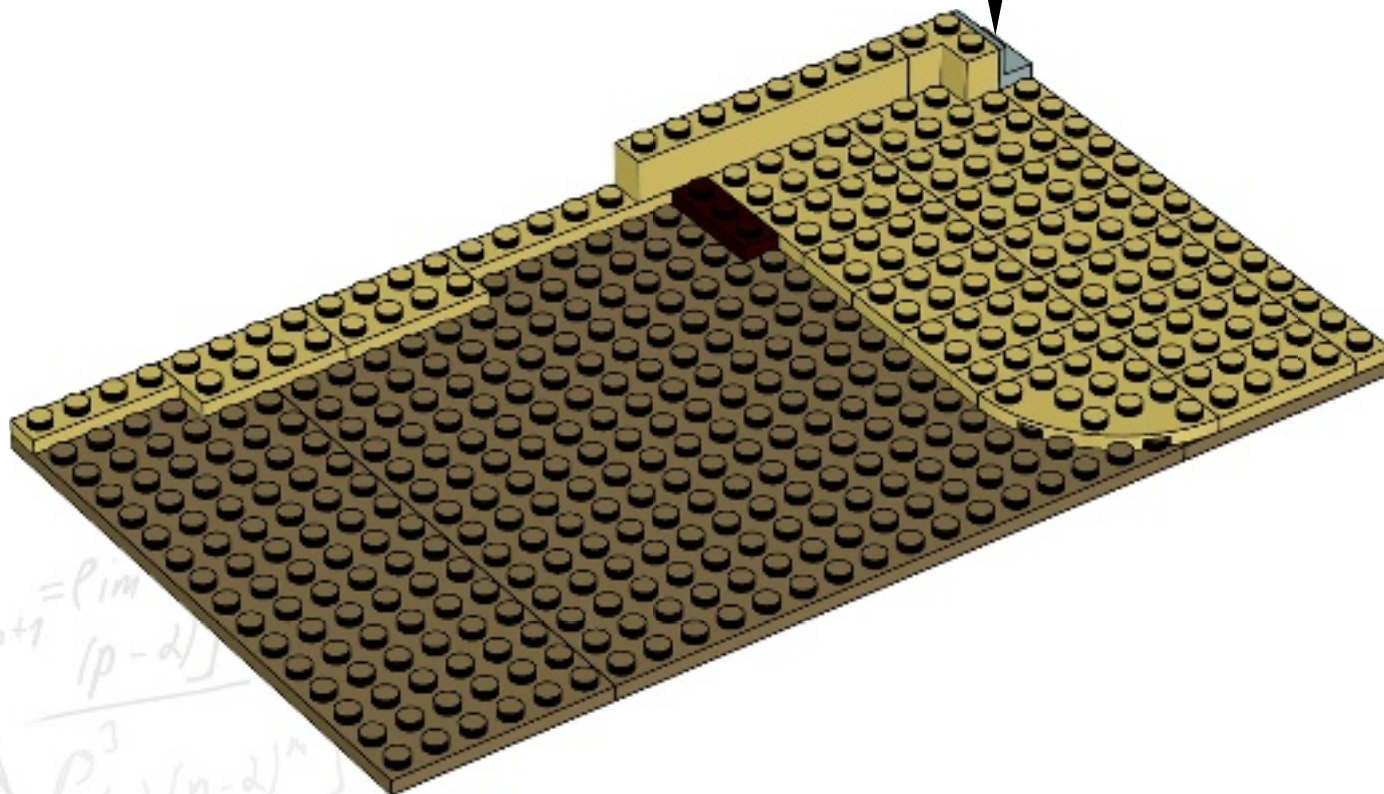
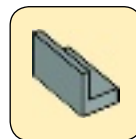


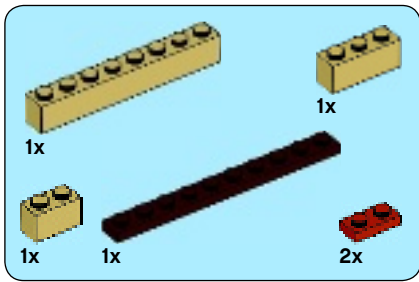
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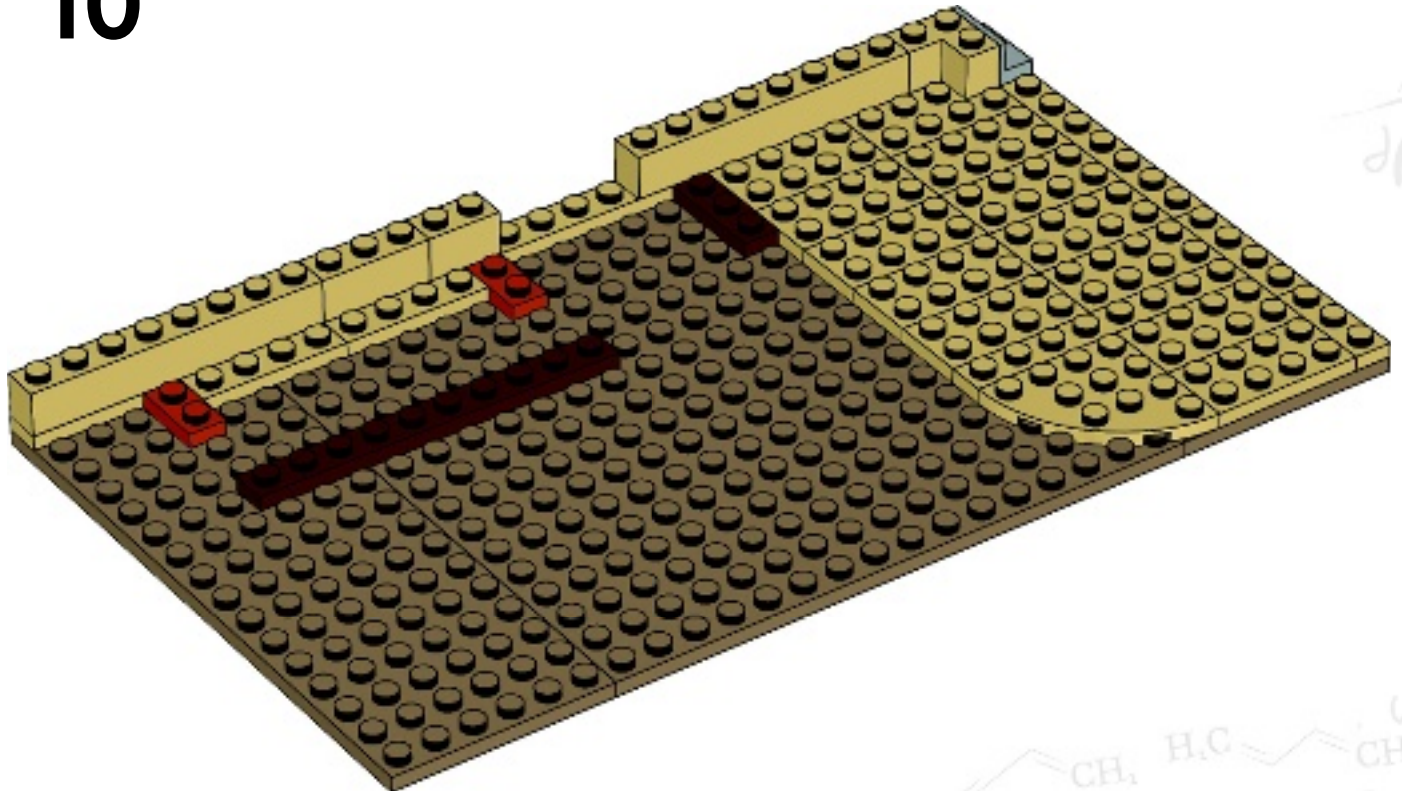


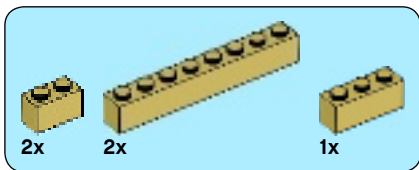
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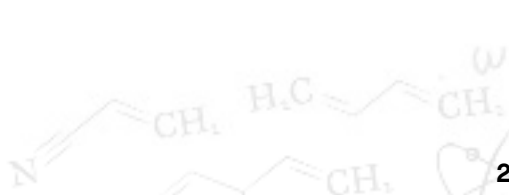
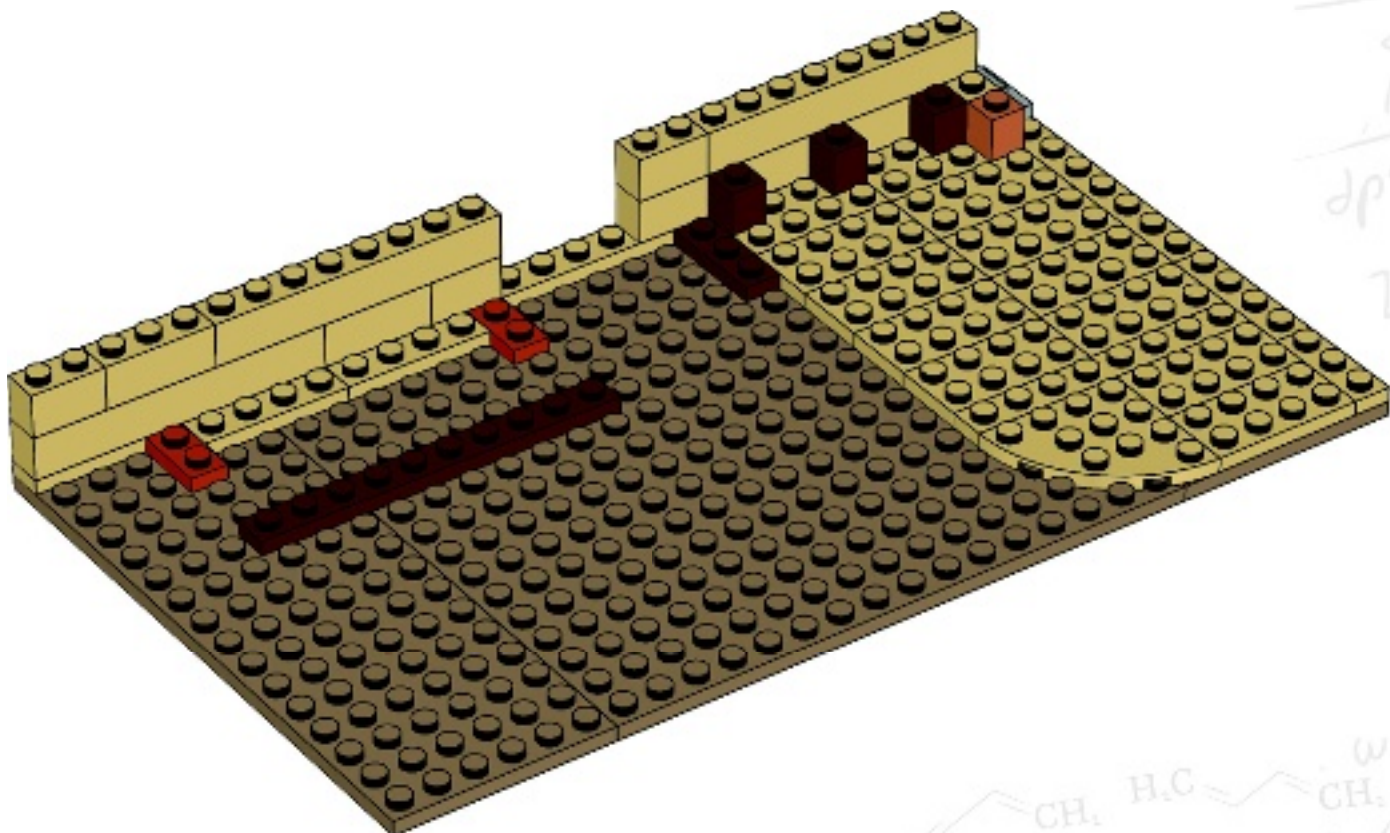


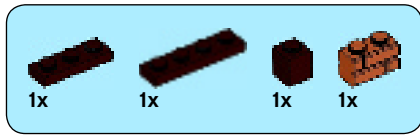
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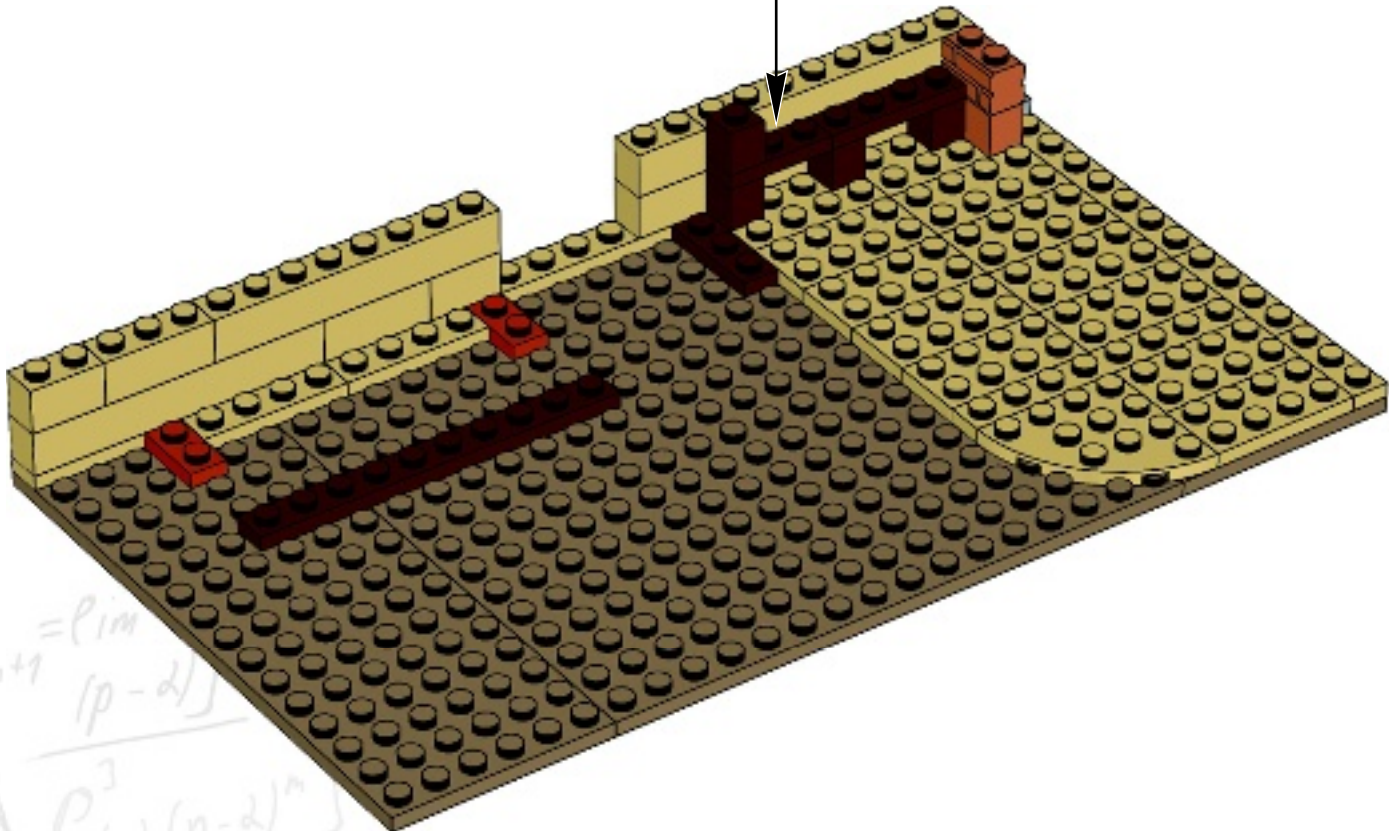
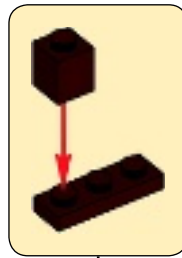


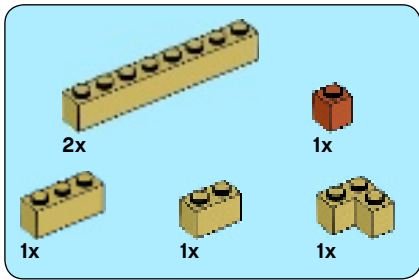
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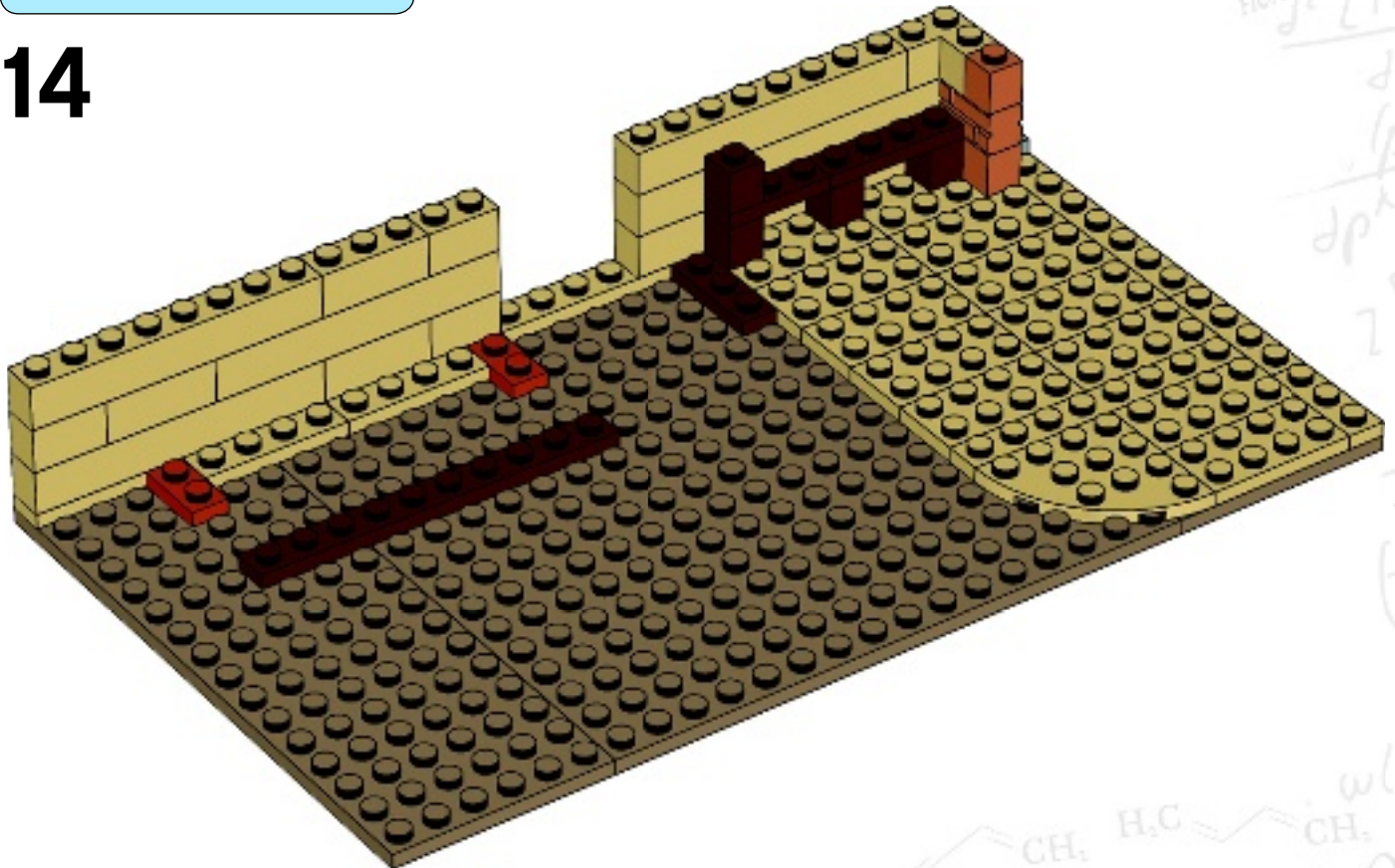


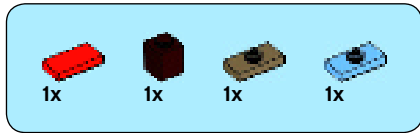
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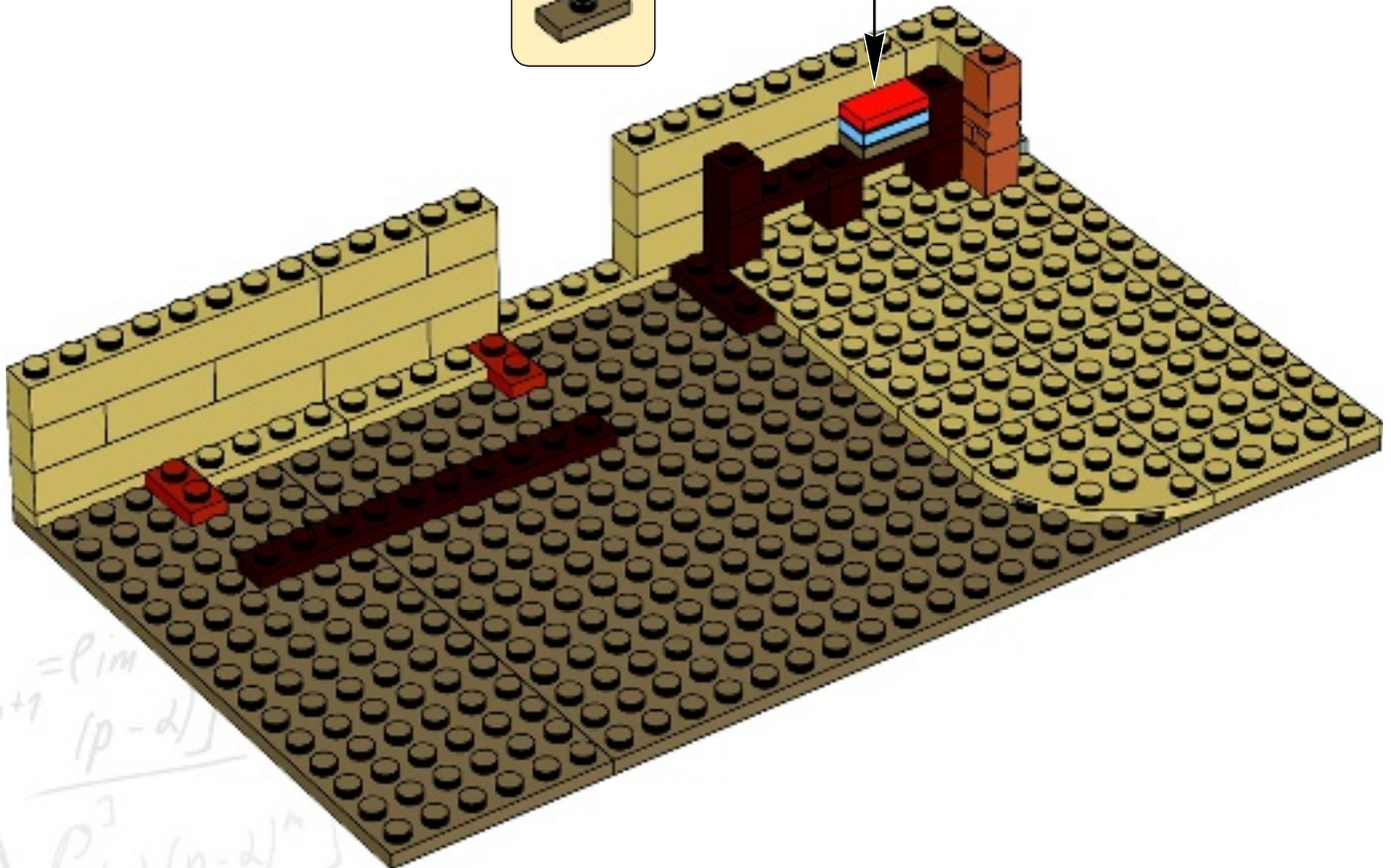
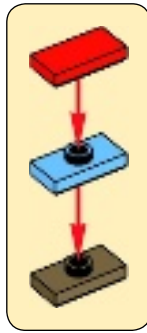


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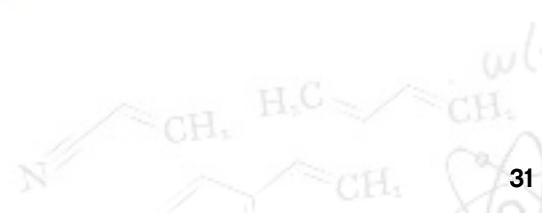
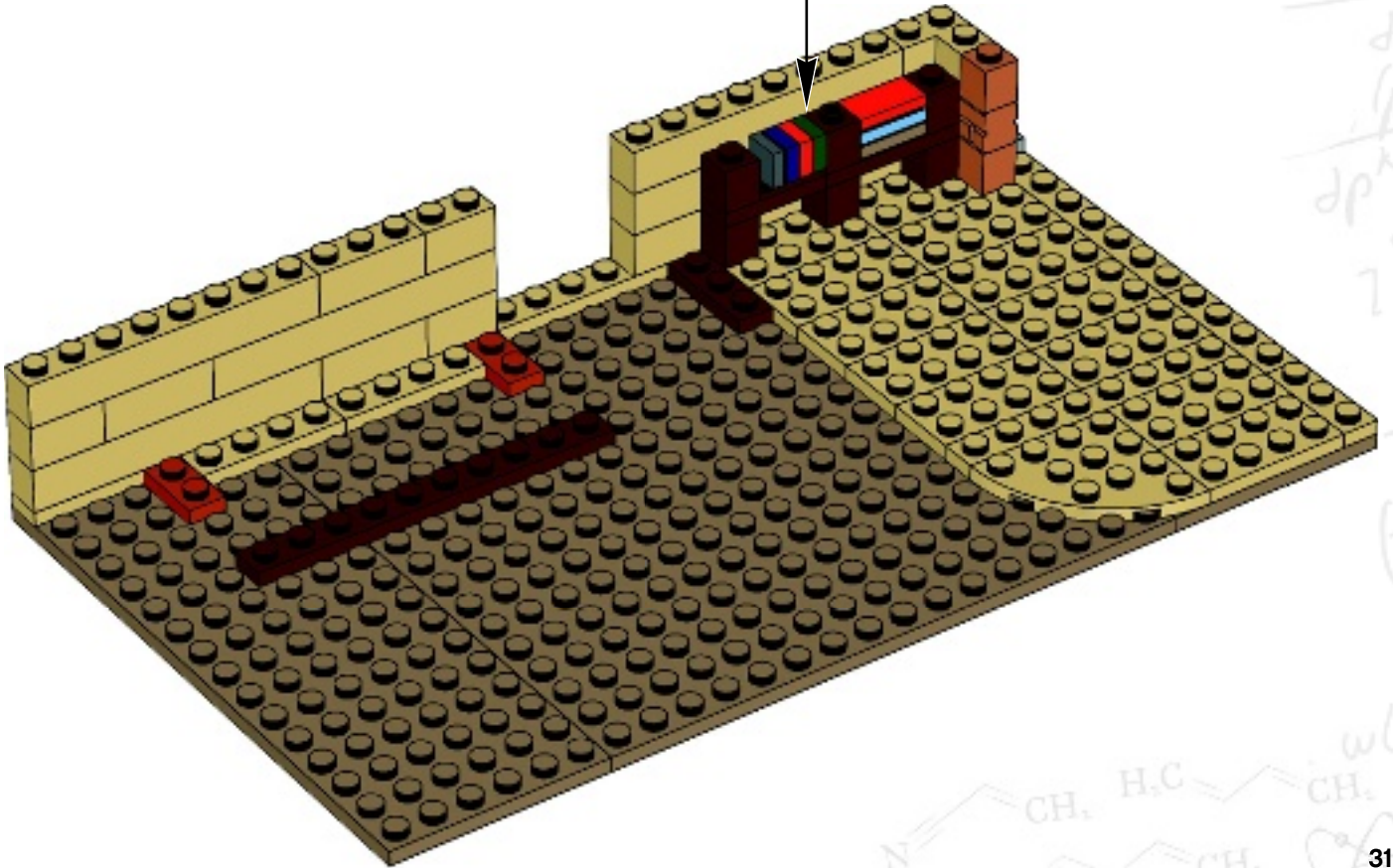
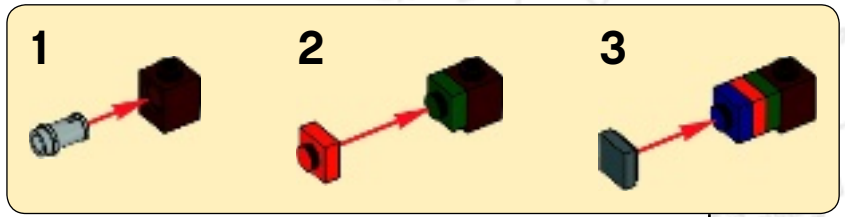


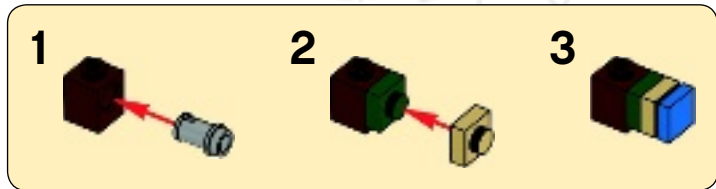
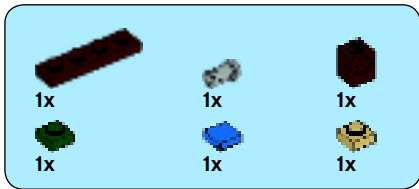
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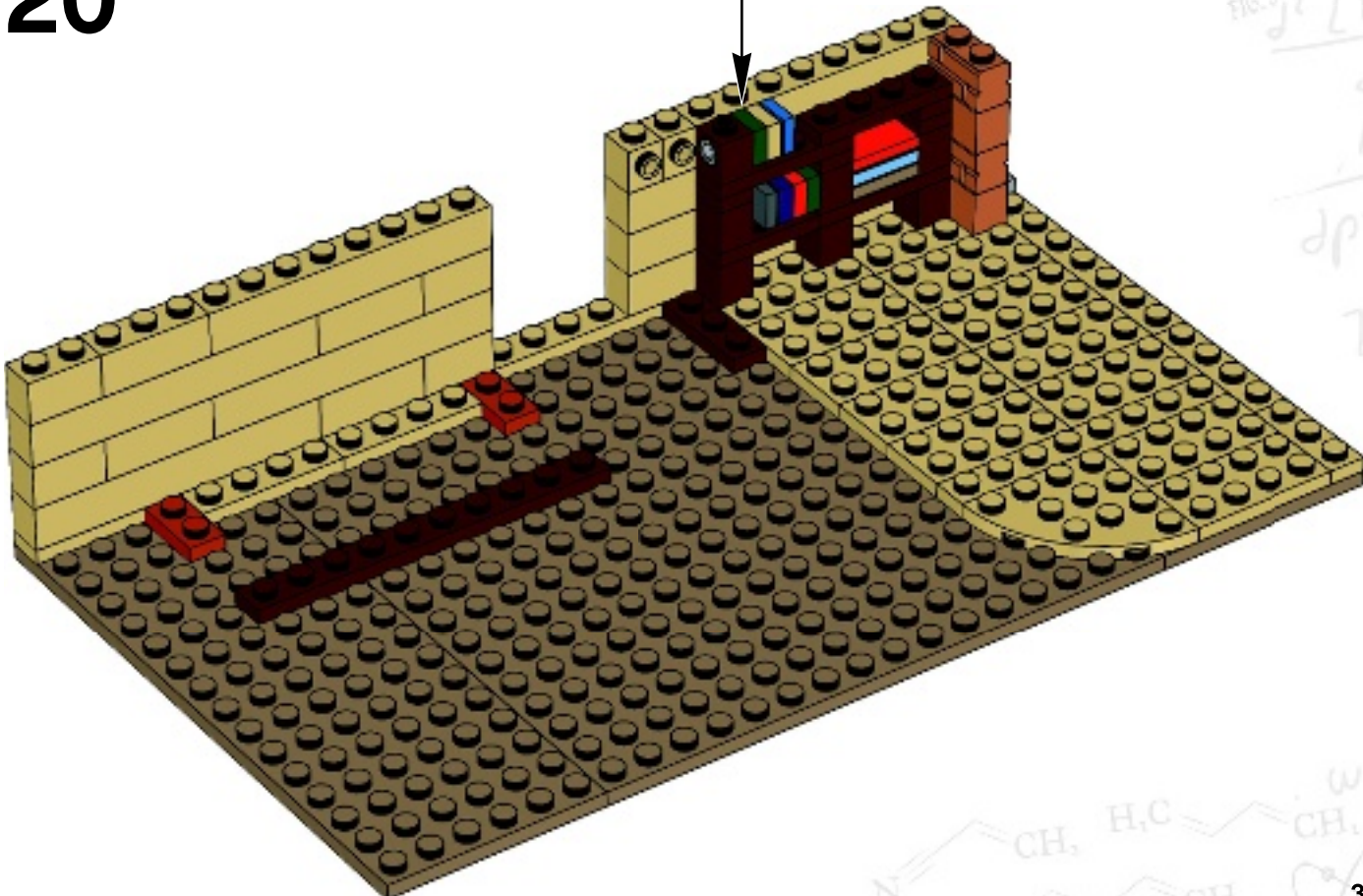


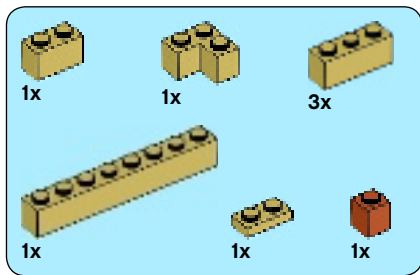
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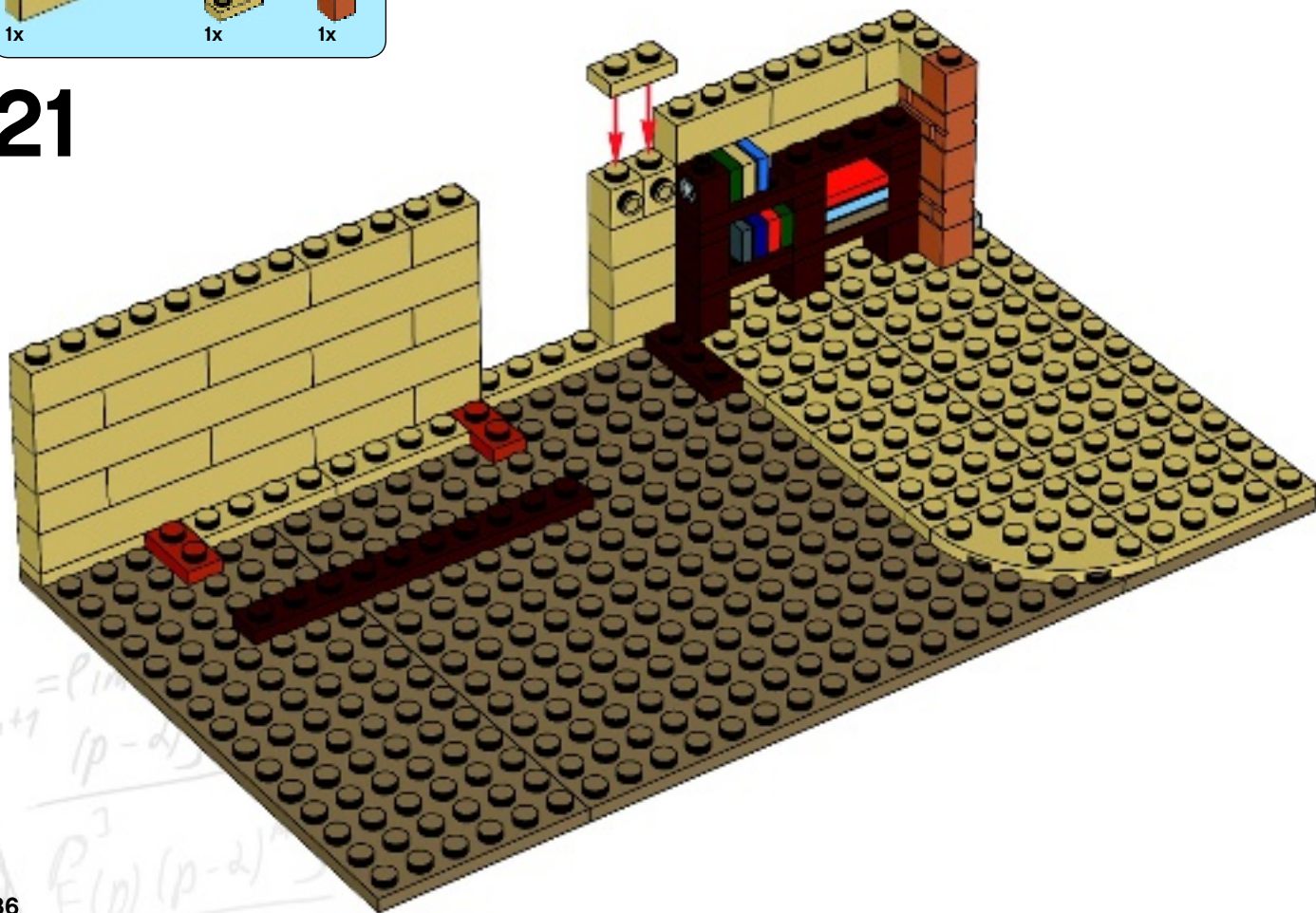


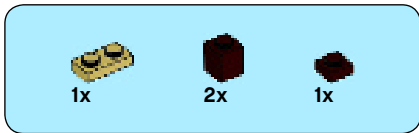
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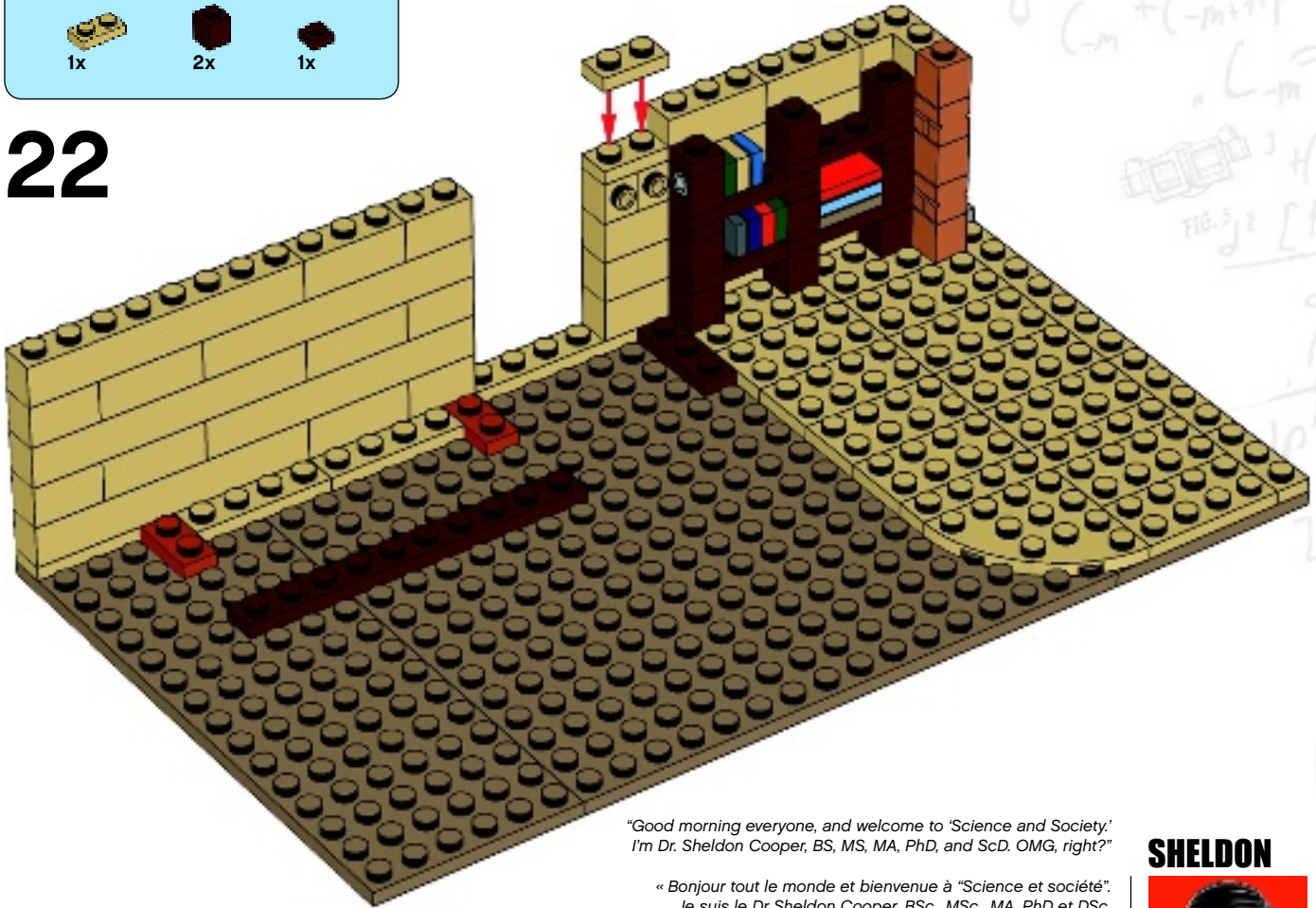


21





22



"Good morning everyone, and welcome to 'Science and Society.'
I'm Dr. Sheldon Cooper, BS, MS, MA, PhD, and ScD. OMG, right?"

« Bonjour tout le monde et bienvenue à "Science et société".
Je suis le Dr Sheldon Cooper, BSc., MSc., MA, PhD et DSc.
Impressionnant, non ? »

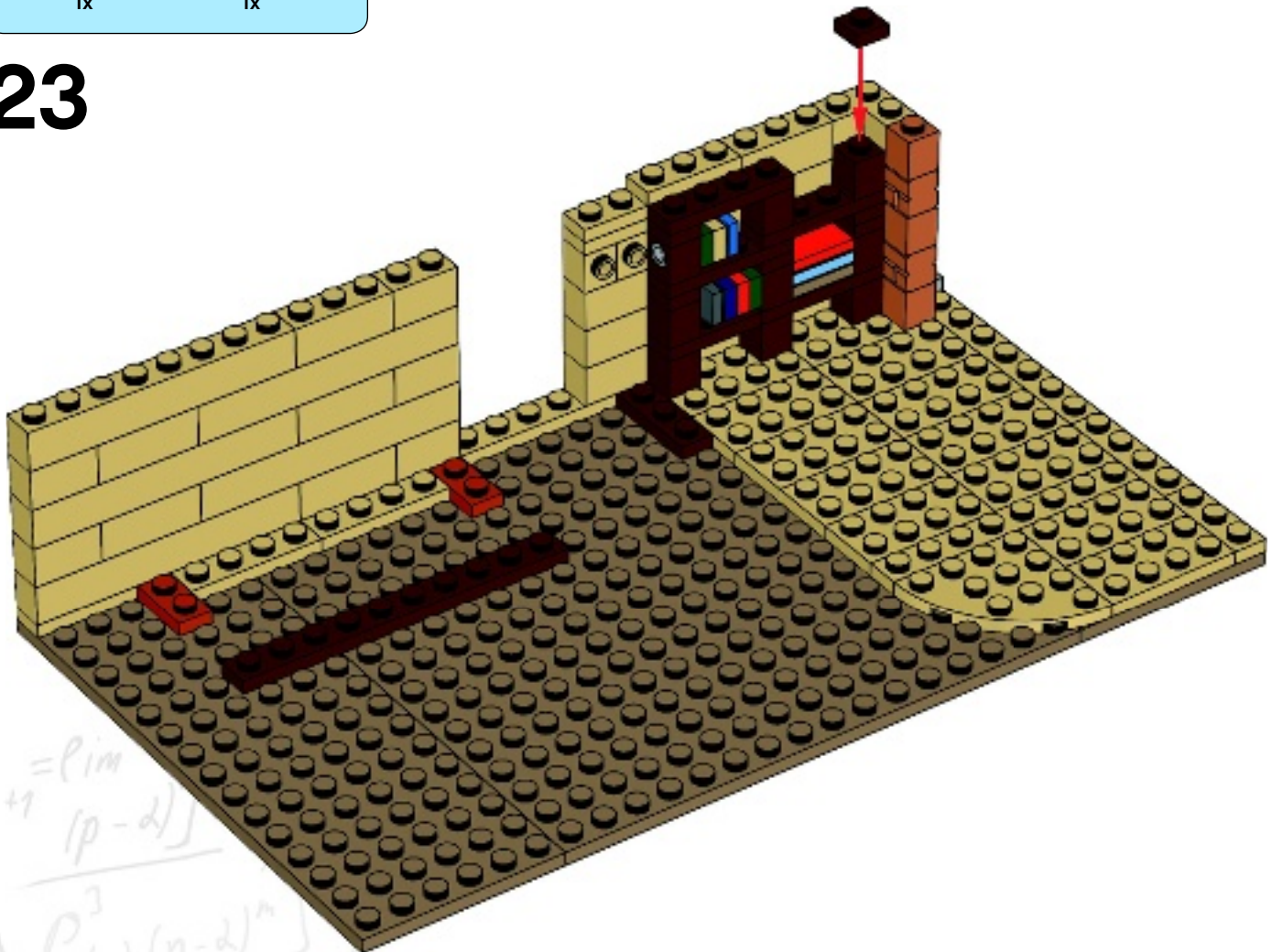
«Buenos días. Bienvenidos a "Ciencia y sociedad".
Soy el Dr. Sheldon Cooper, bachiller, maestro en
ciencia, en arte, doctor en filosofía, y en la ciencia.
Oh, qué impresión, ¿no es cierto? »

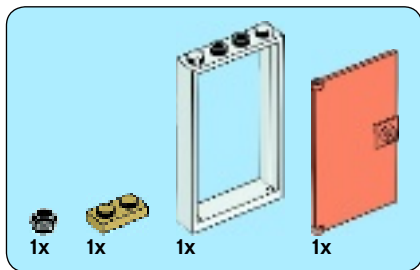
SHELDON



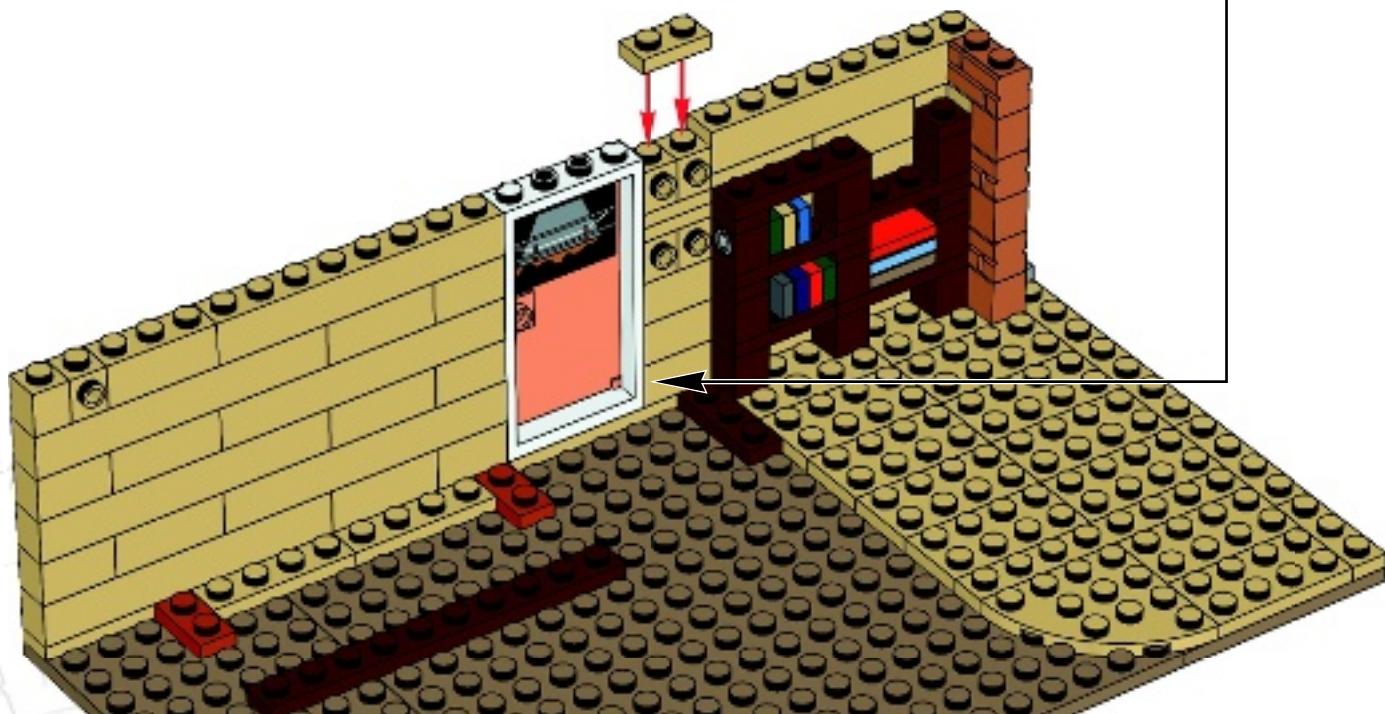
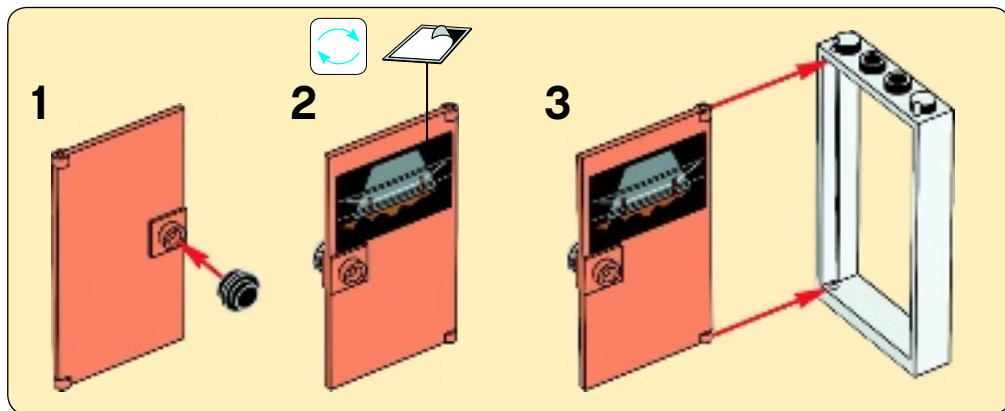


23



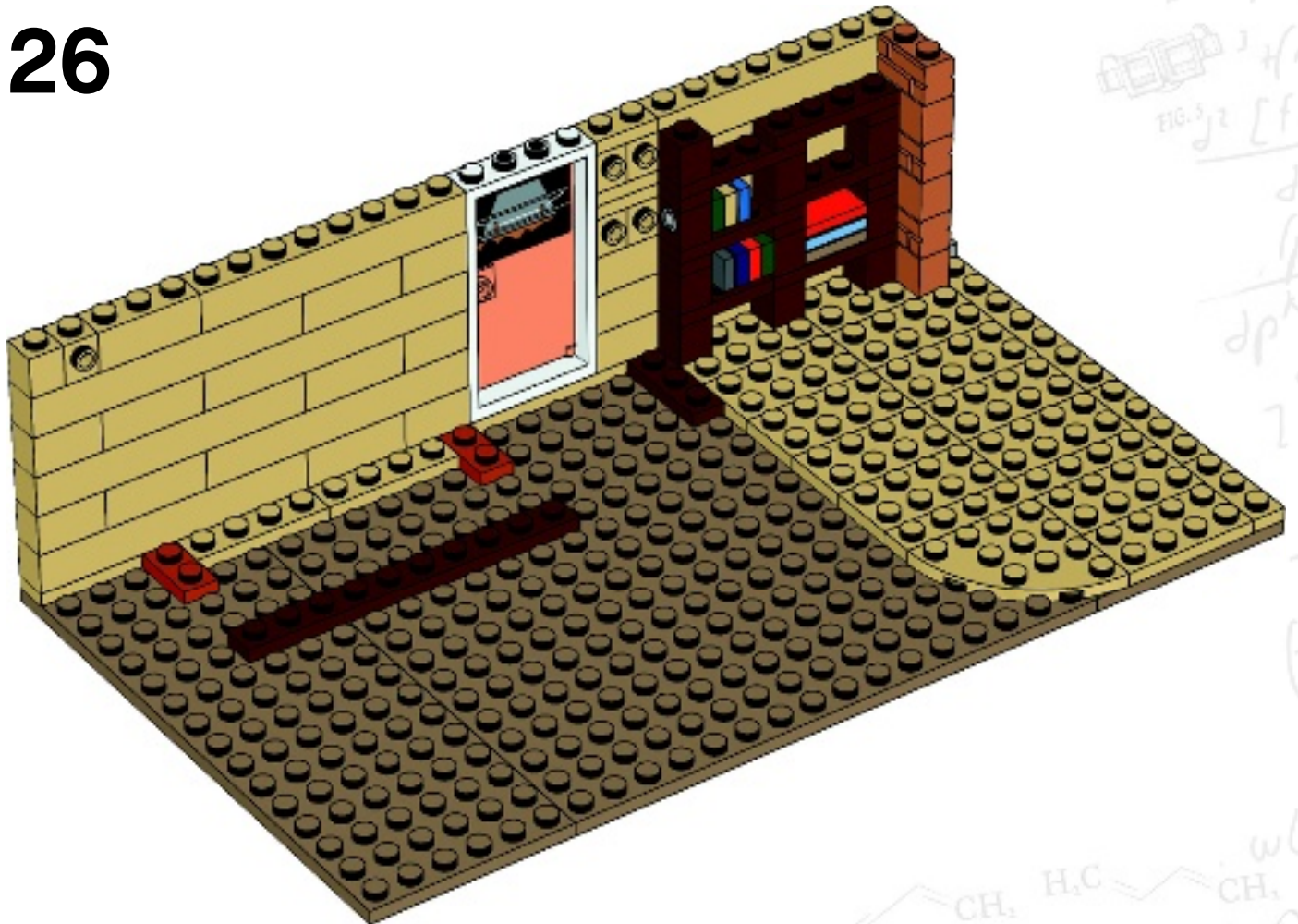


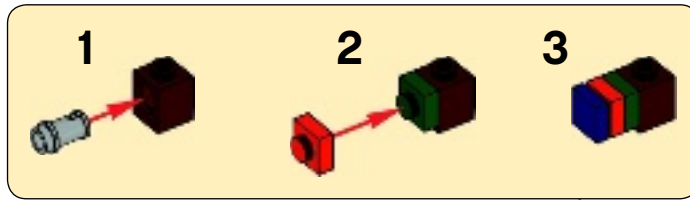
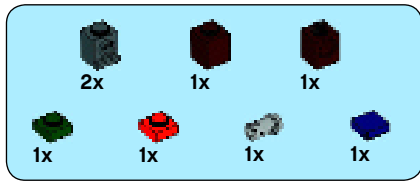
25



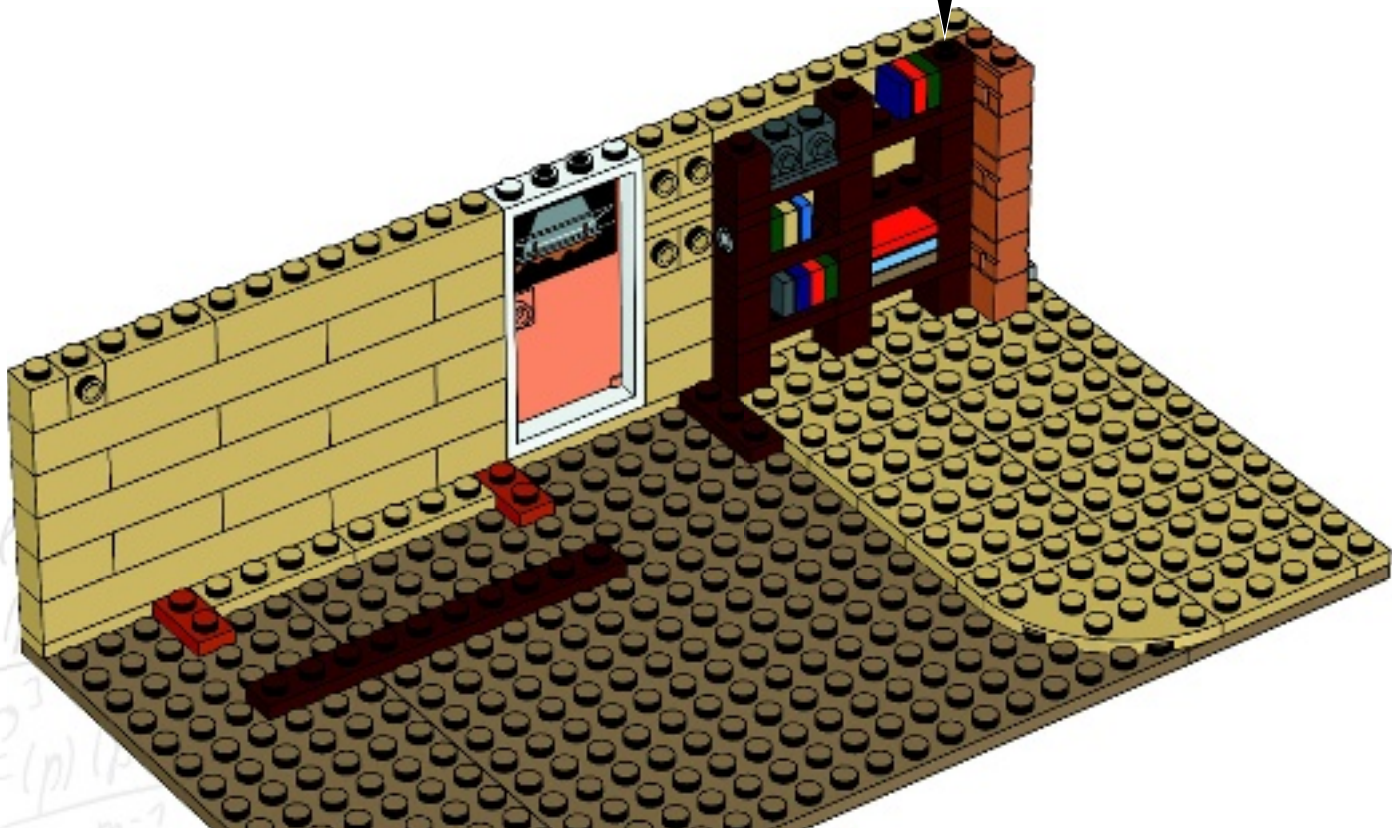


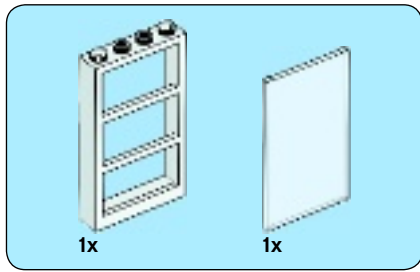
26



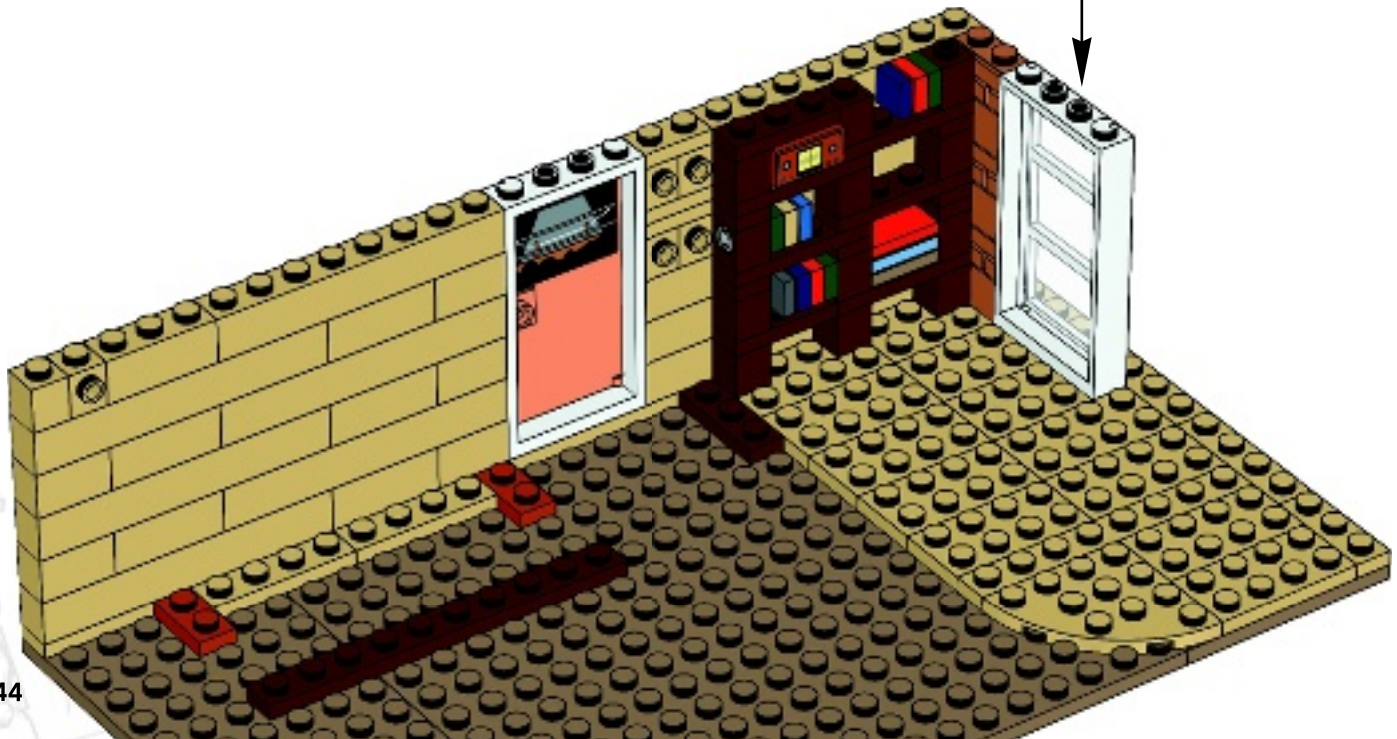
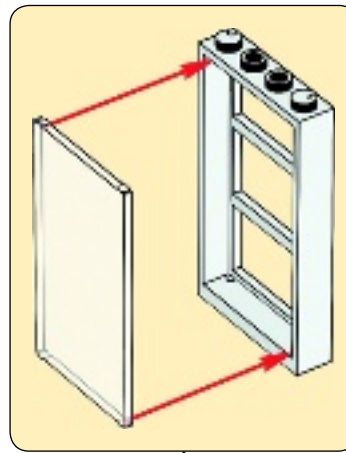


27





29





1x

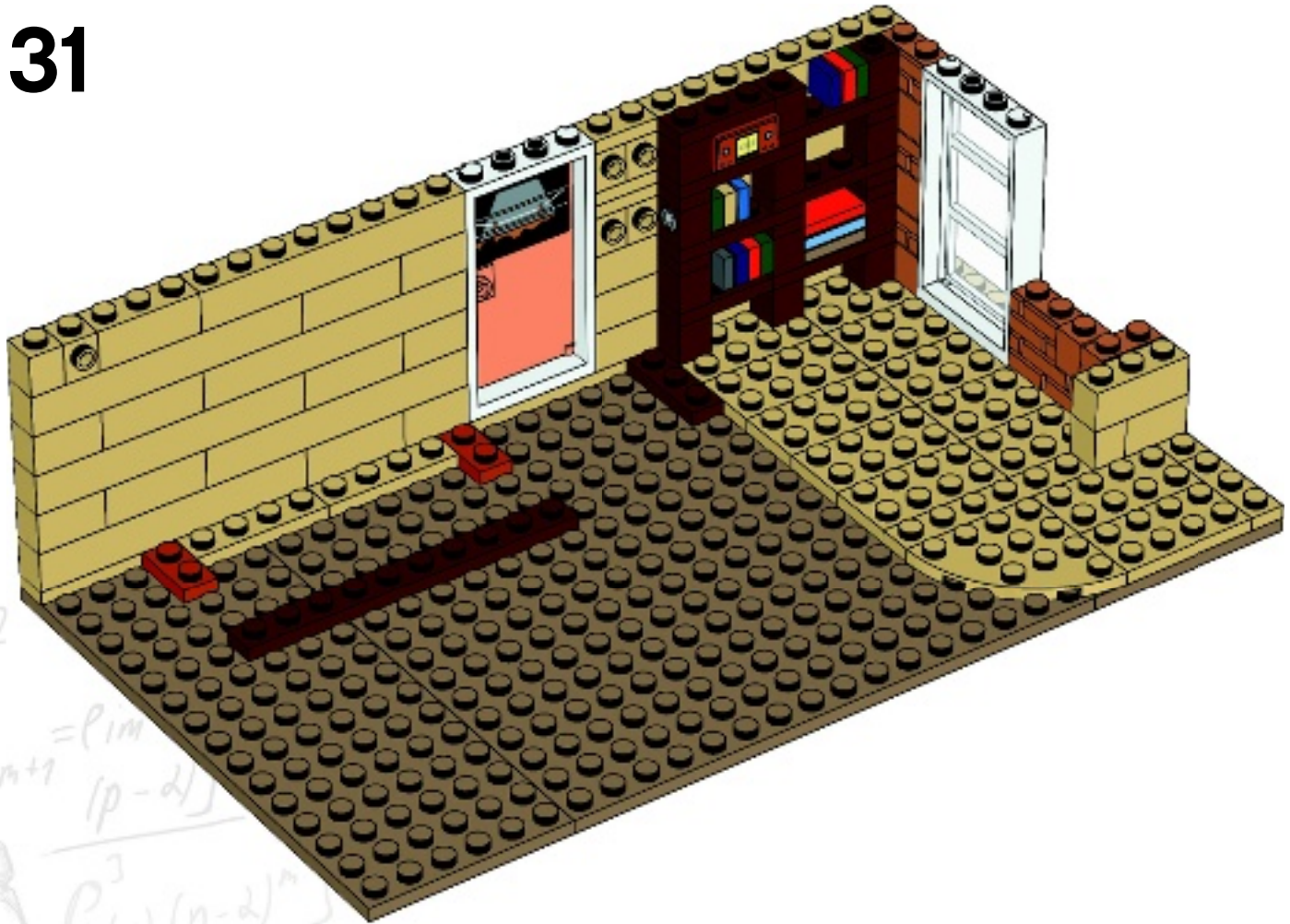


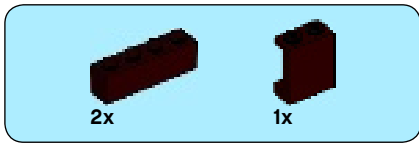
2x



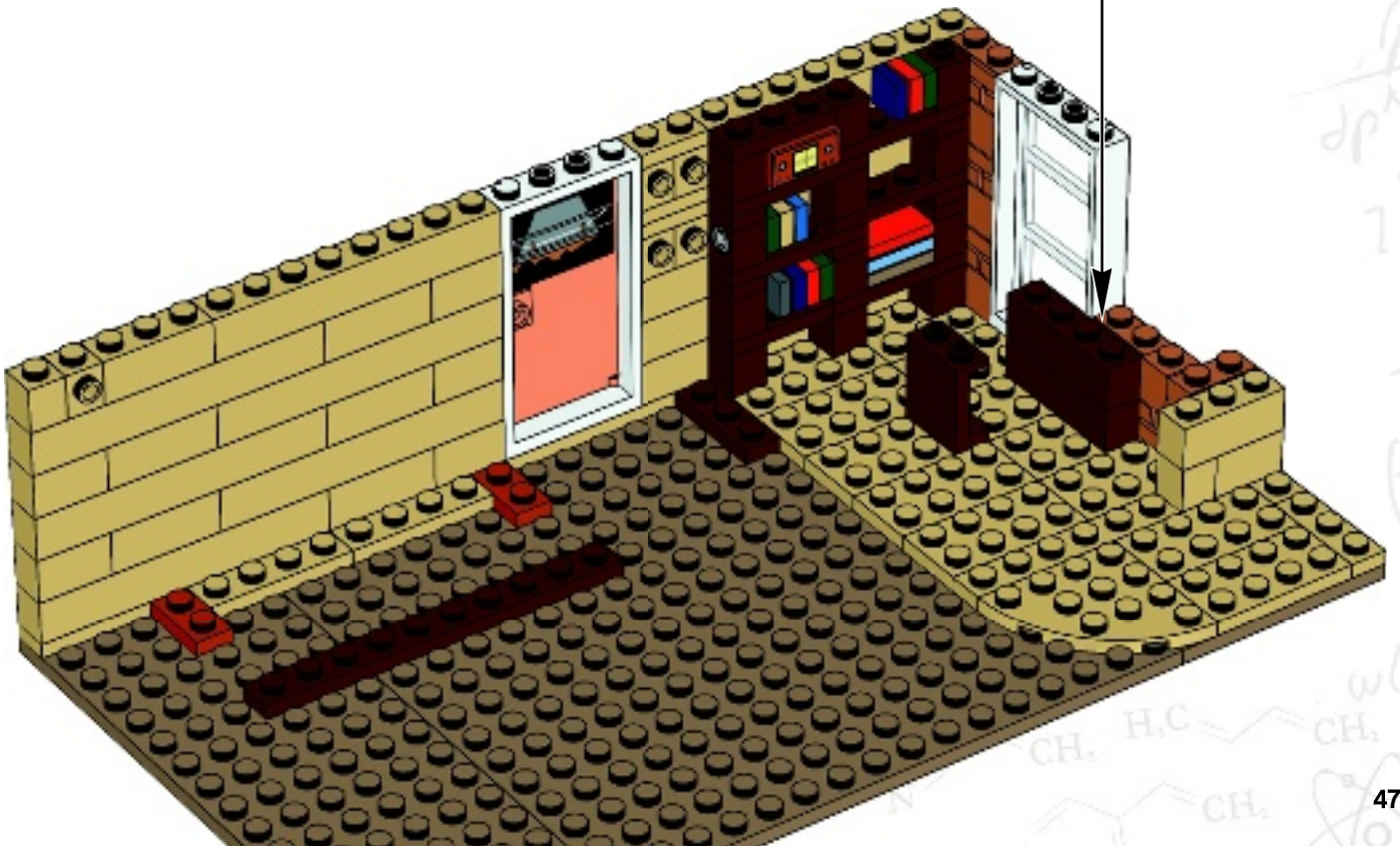
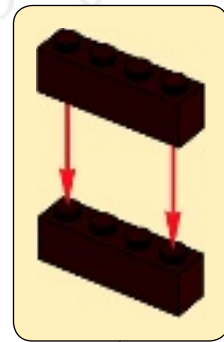
1x

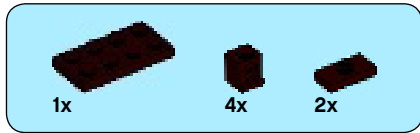
31



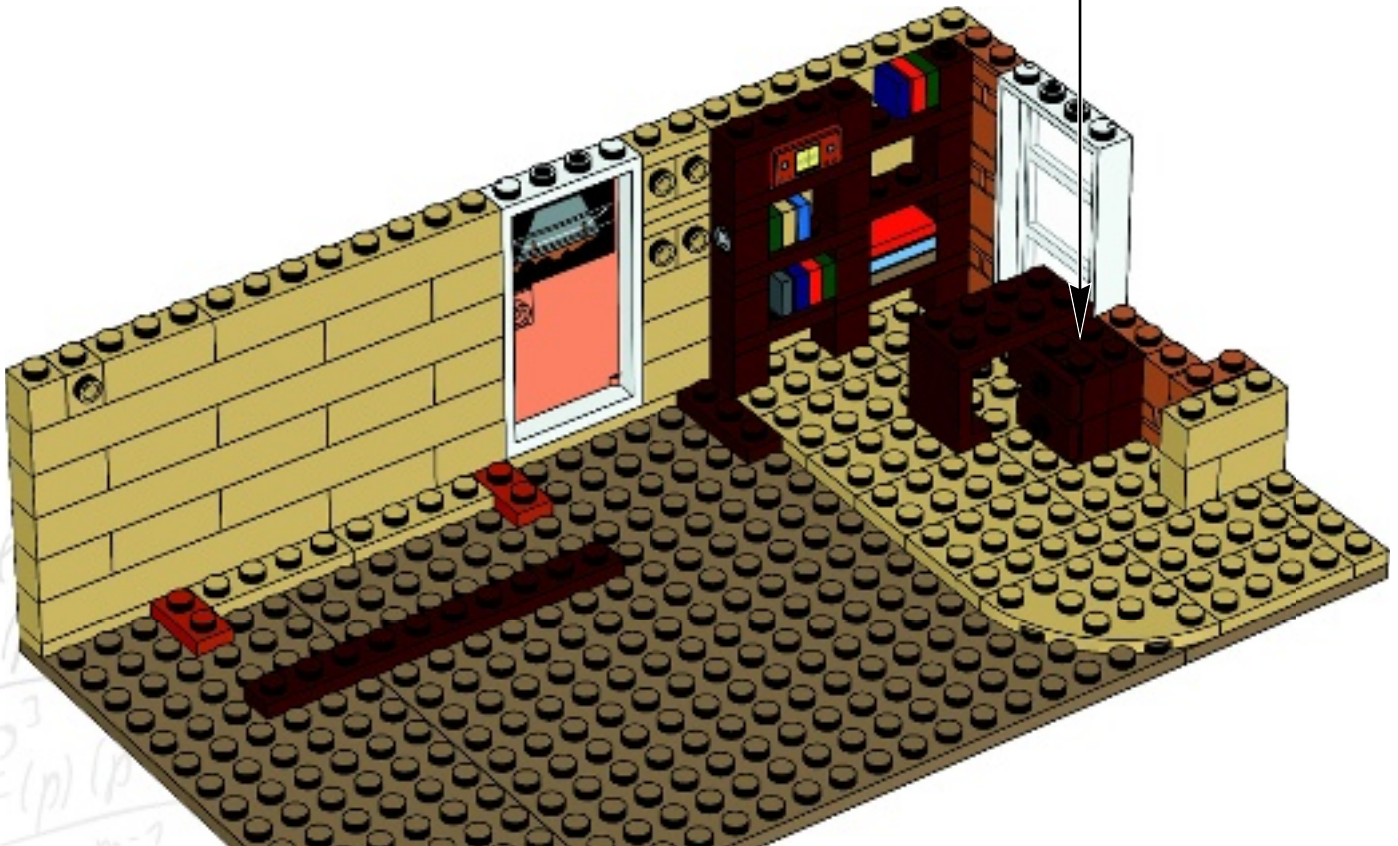
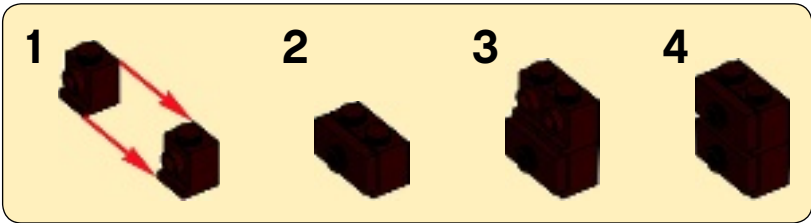


32



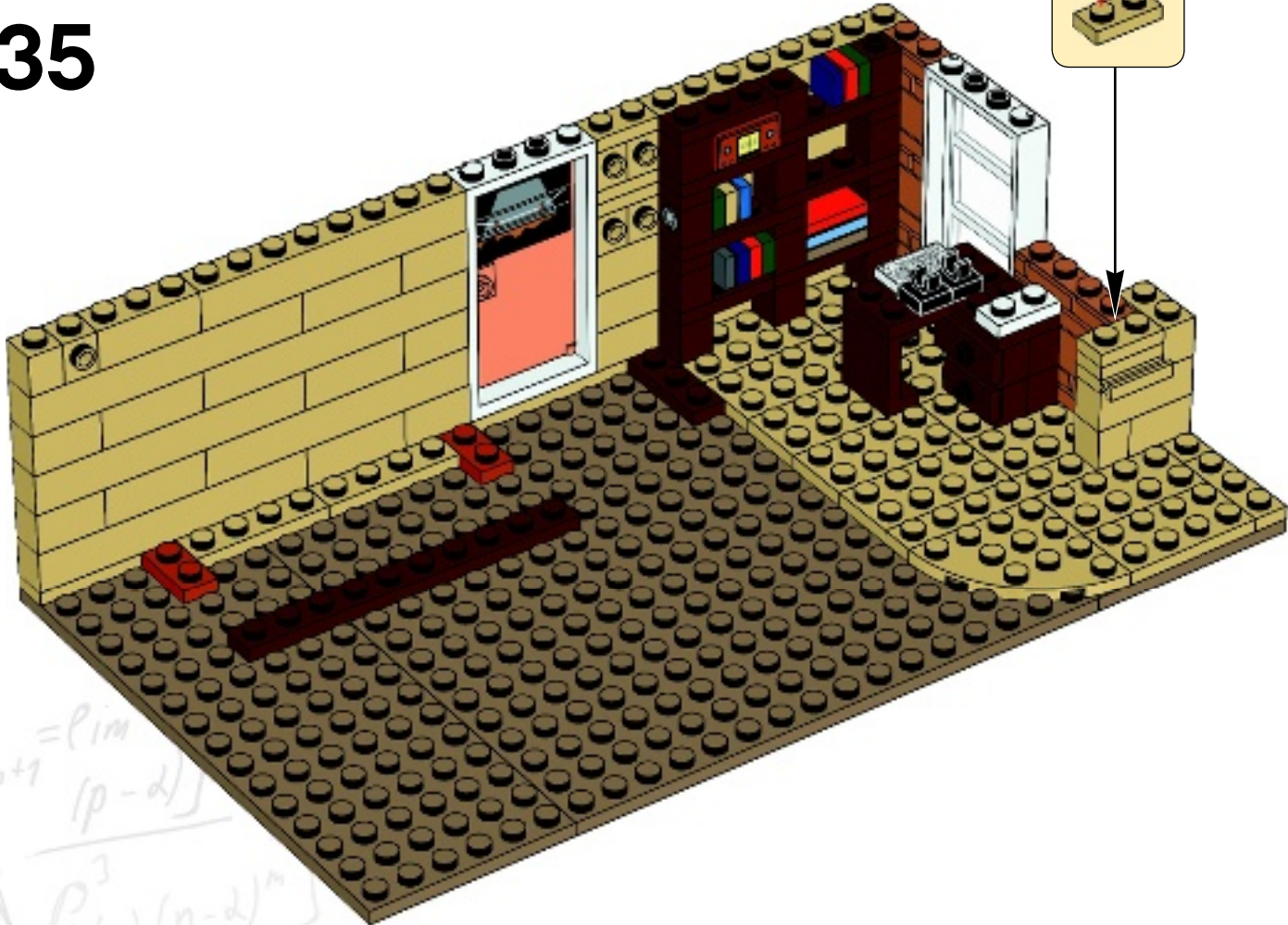
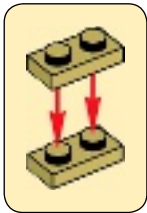


33



1x	2x	1x	2x

35



2

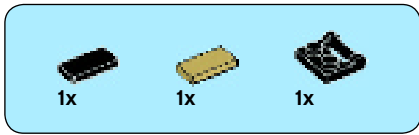
$= p \cdot m$

$-m+1$

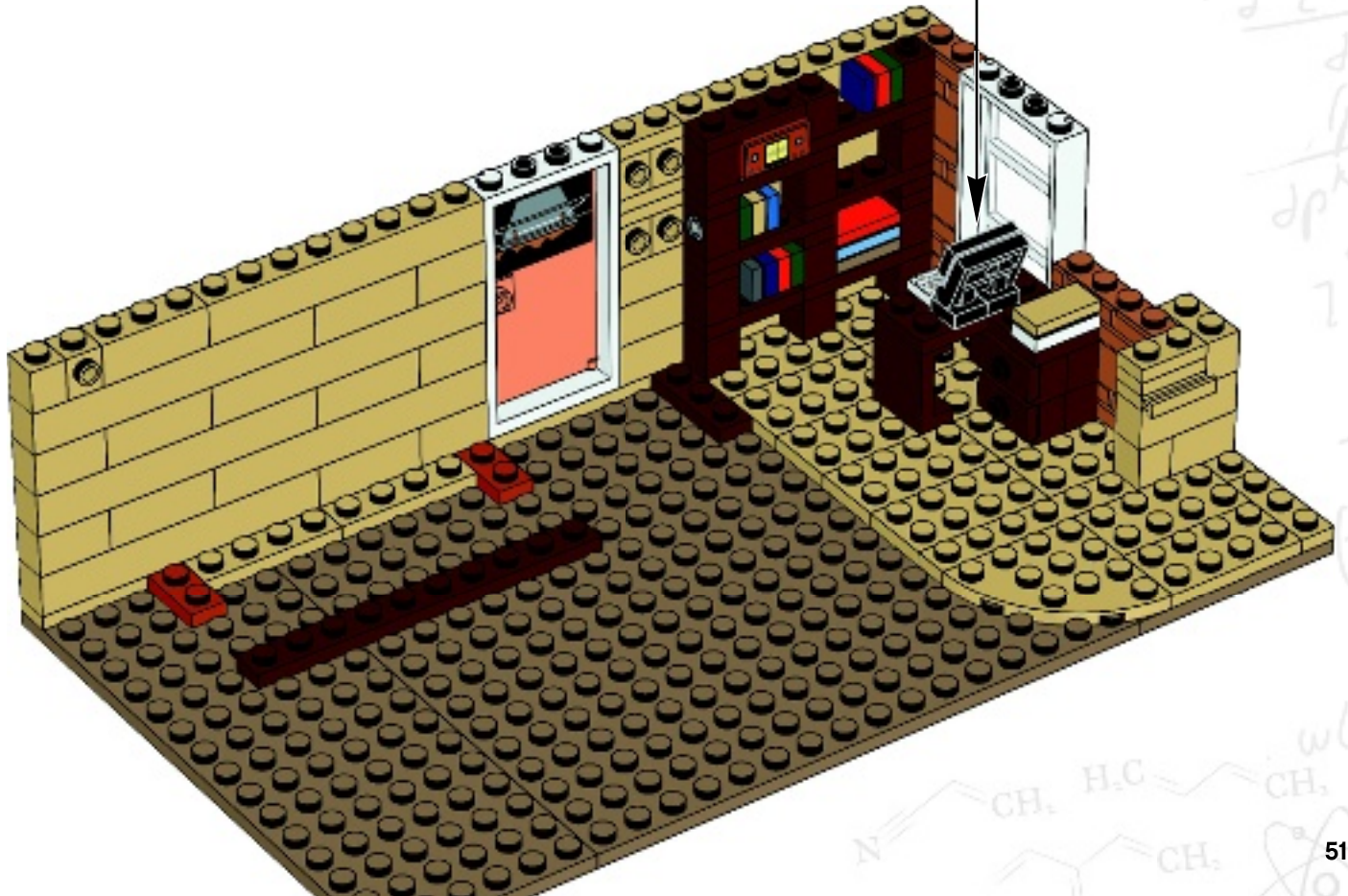
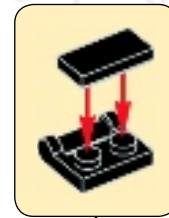
$(p-d)$

p^3

$F(p)(p-d)^m$



36





1x



1x

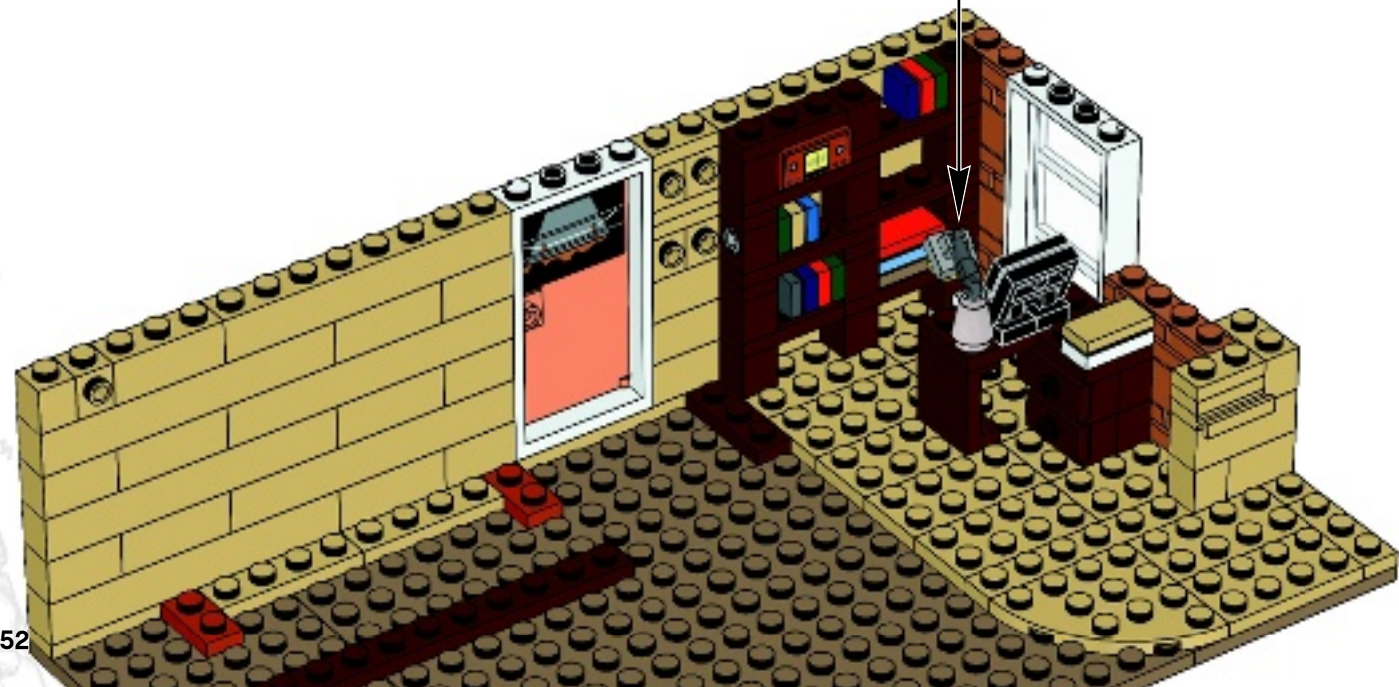
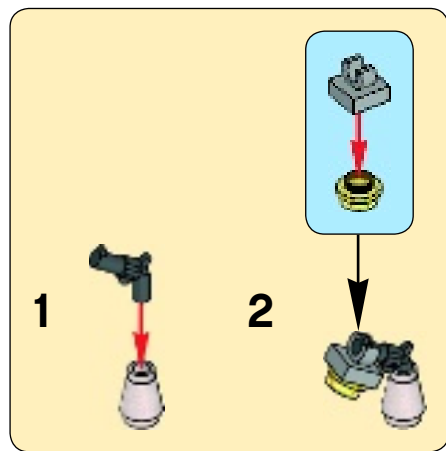


1x



1x

37





2x



1x

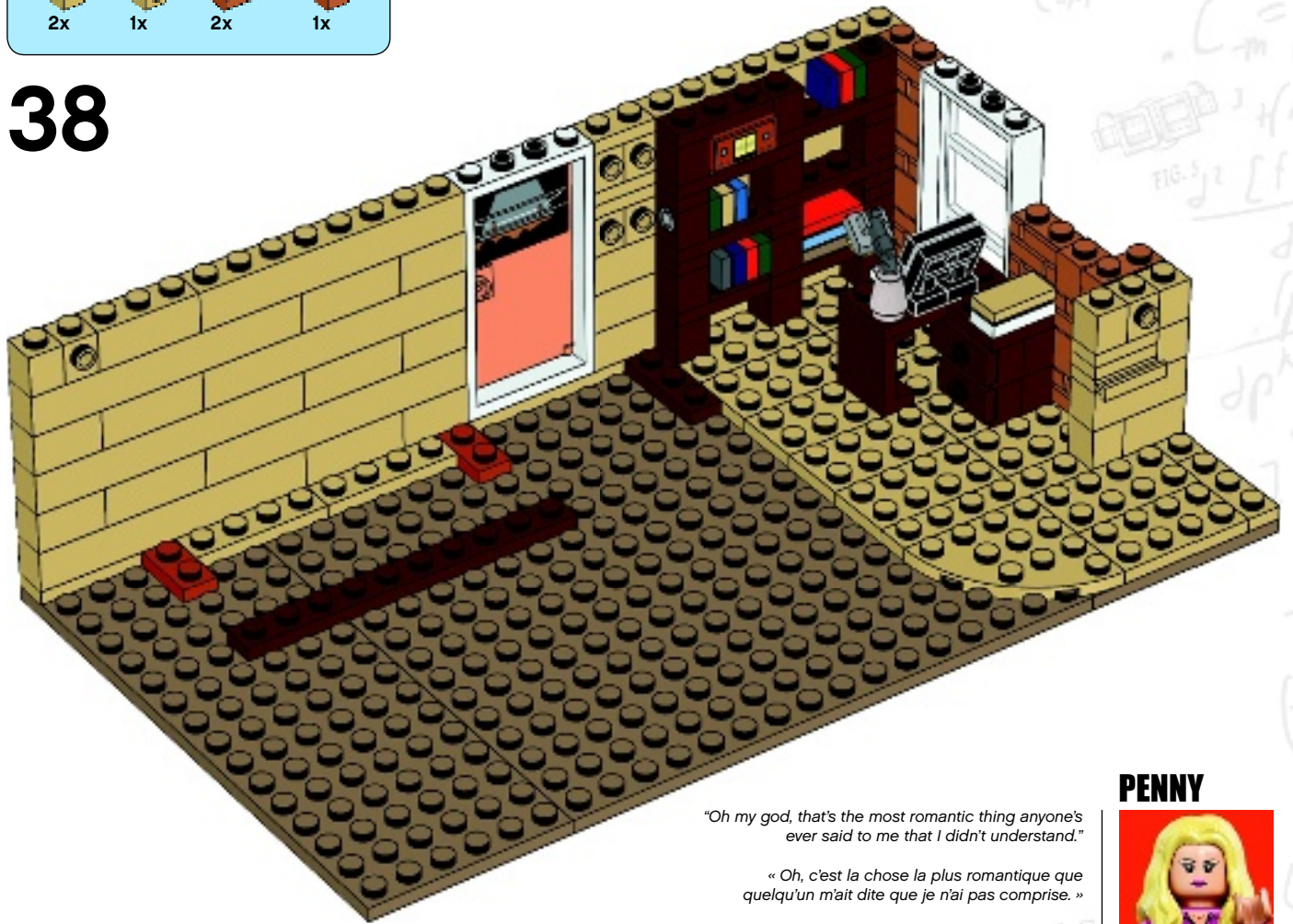


2x



1x

38



PENNY



"Oh my god, that's the most romantic thing anyone's ever said to me that I didn't understand."

« Oh, c'est la chose la plus romantique que quelqu'un m'a dit que je n'ai pas comprise. »

« Dios mío, eso es lo más romántico que nadie me ha dicho nunca y no comprendí. »

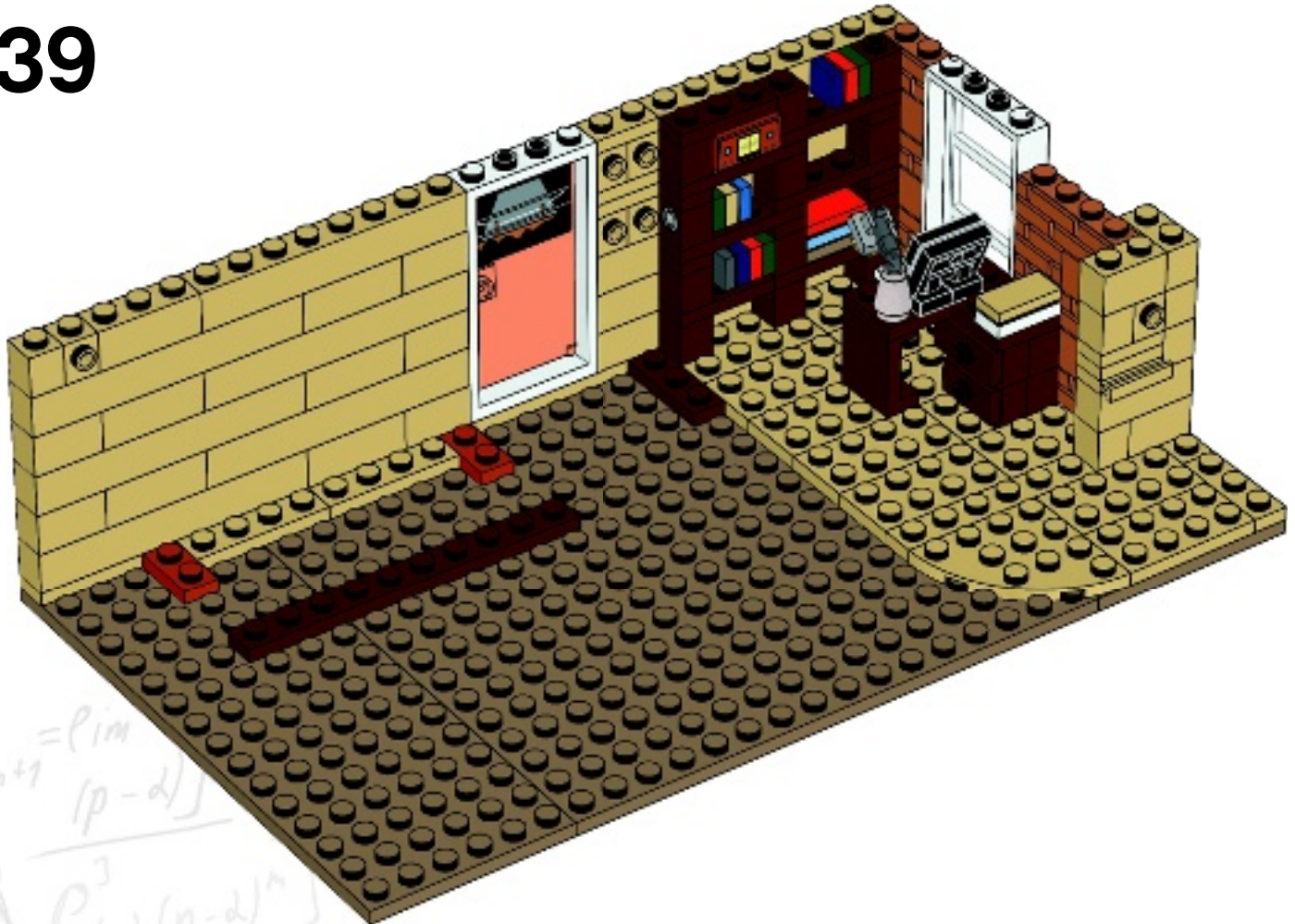


2x



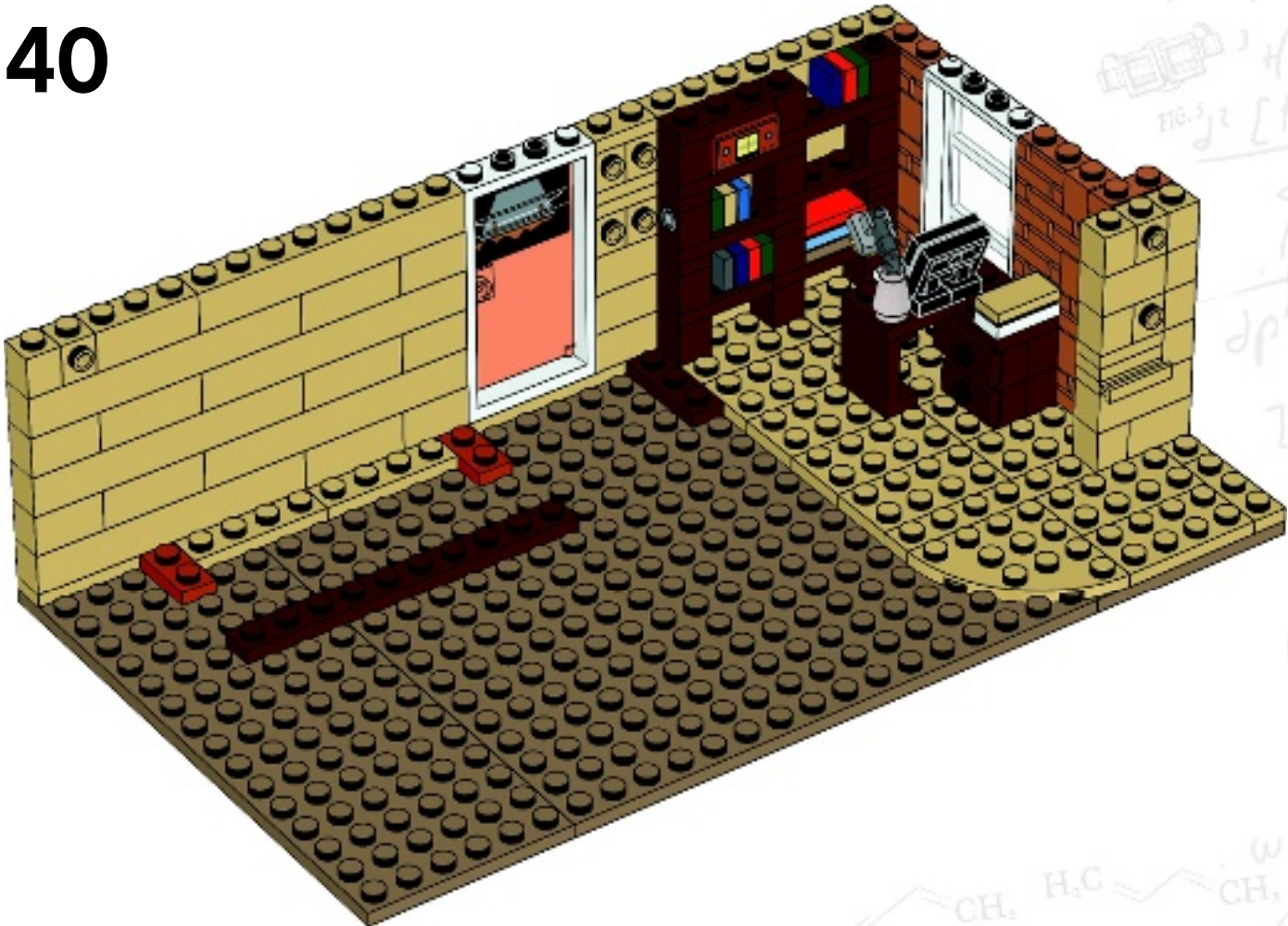
1x

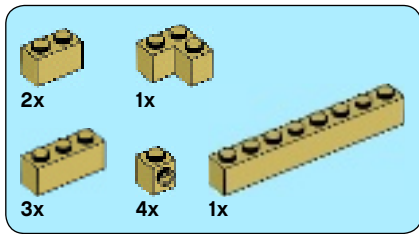
39



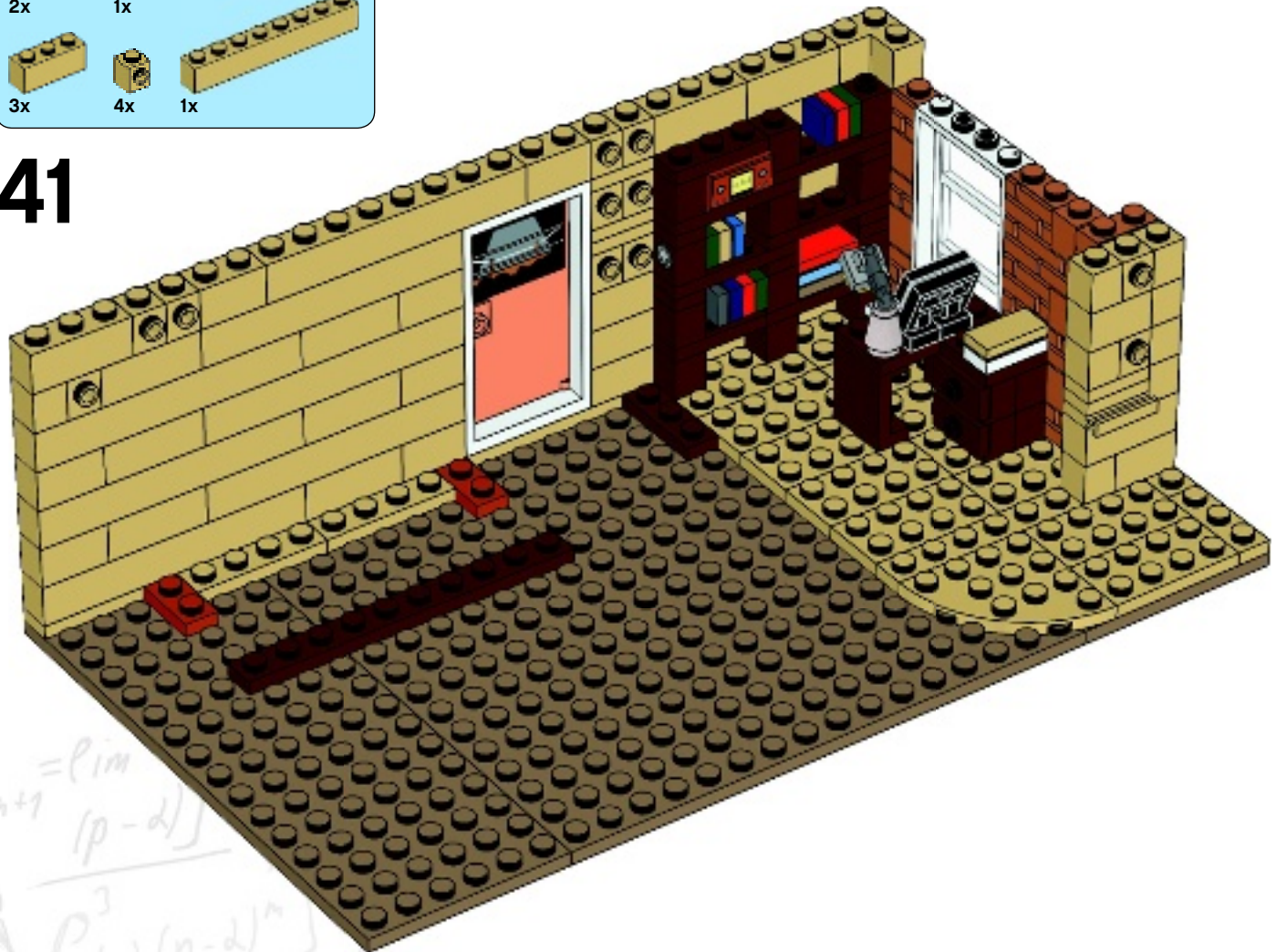
			
2x	1x	2x	1x

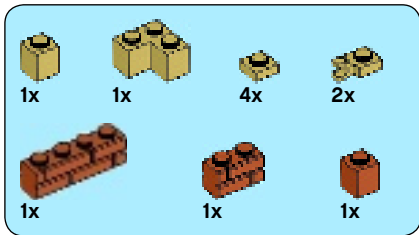
40



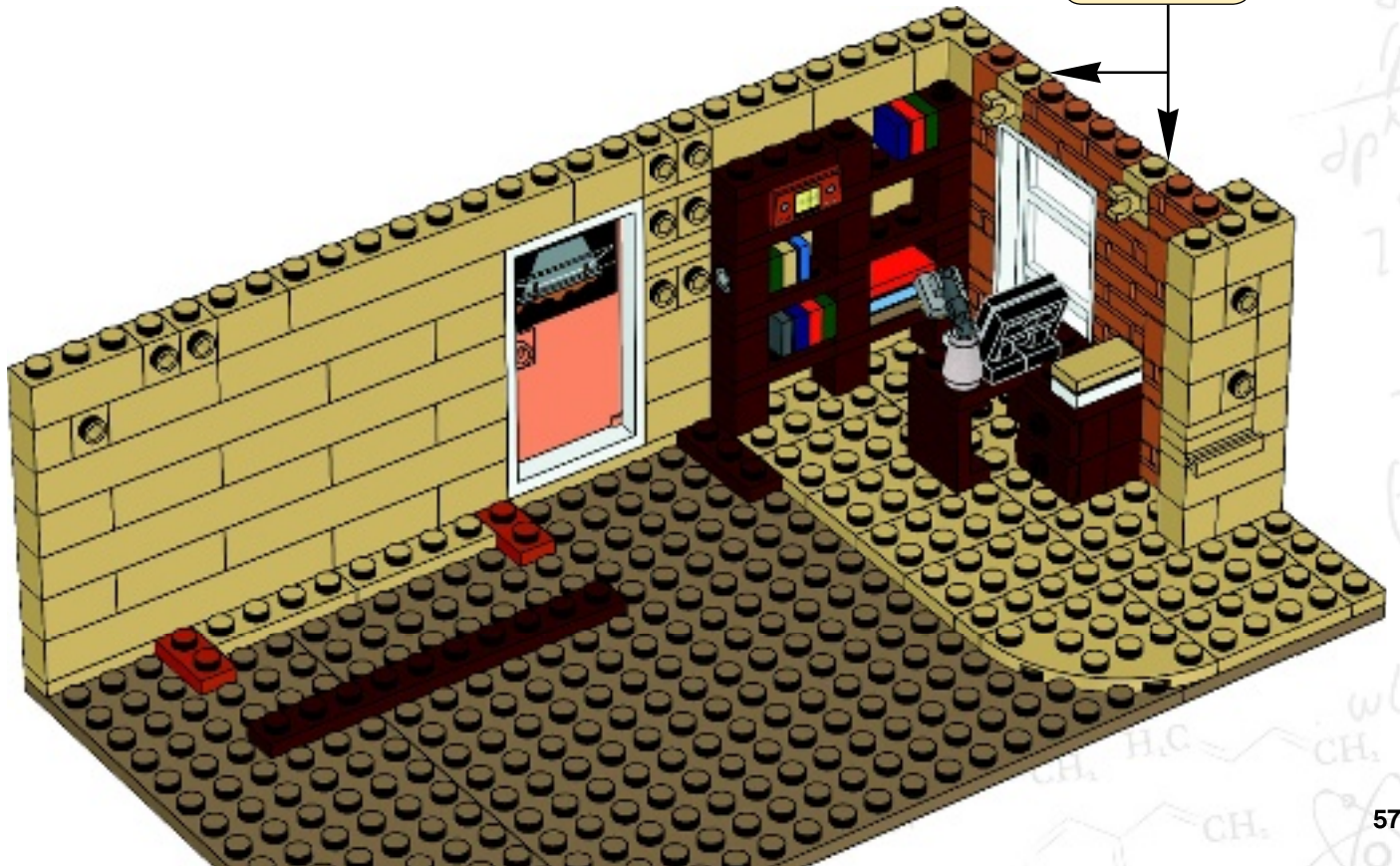
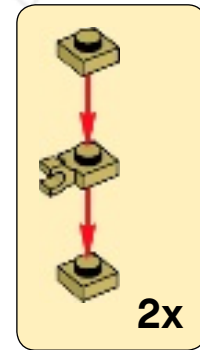


41



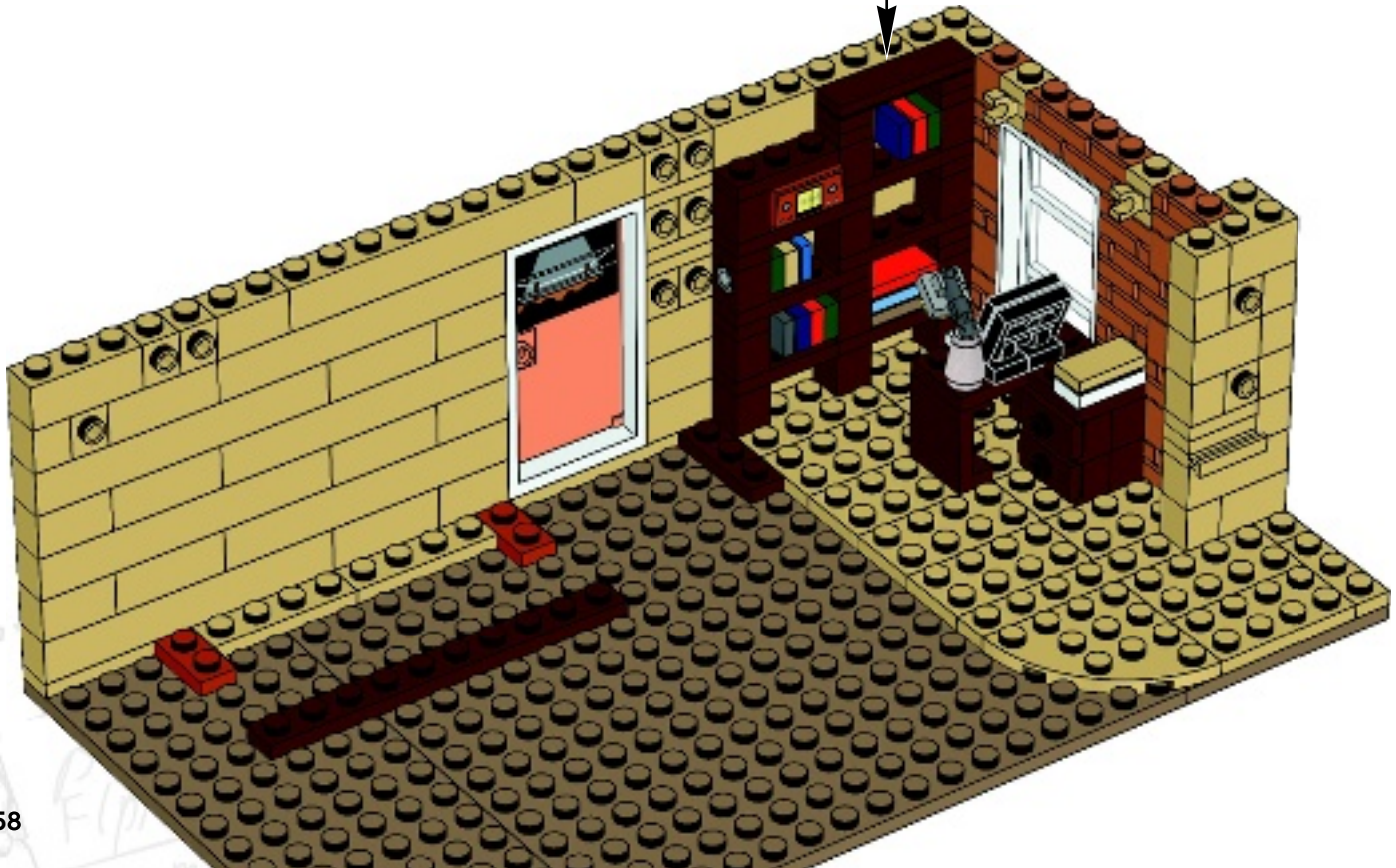
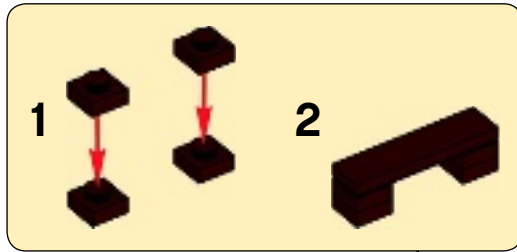


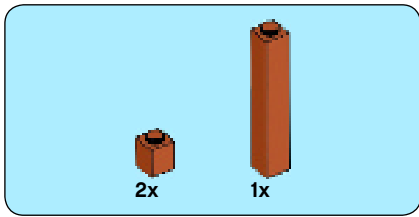
42



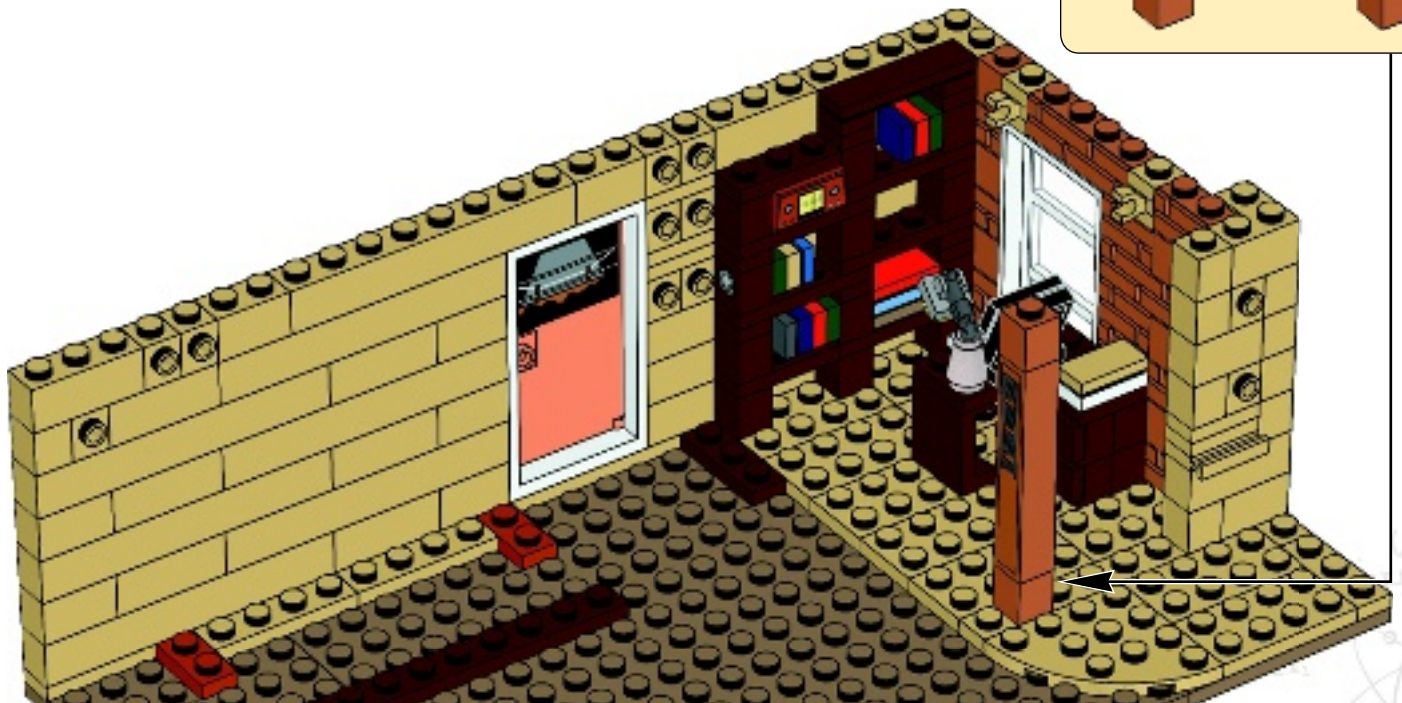
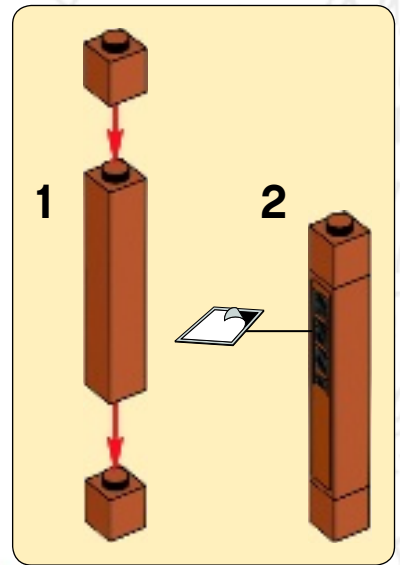


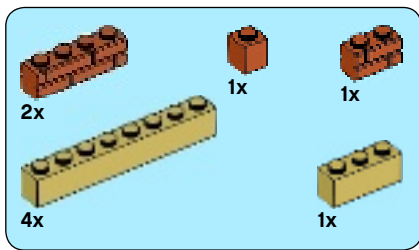
43



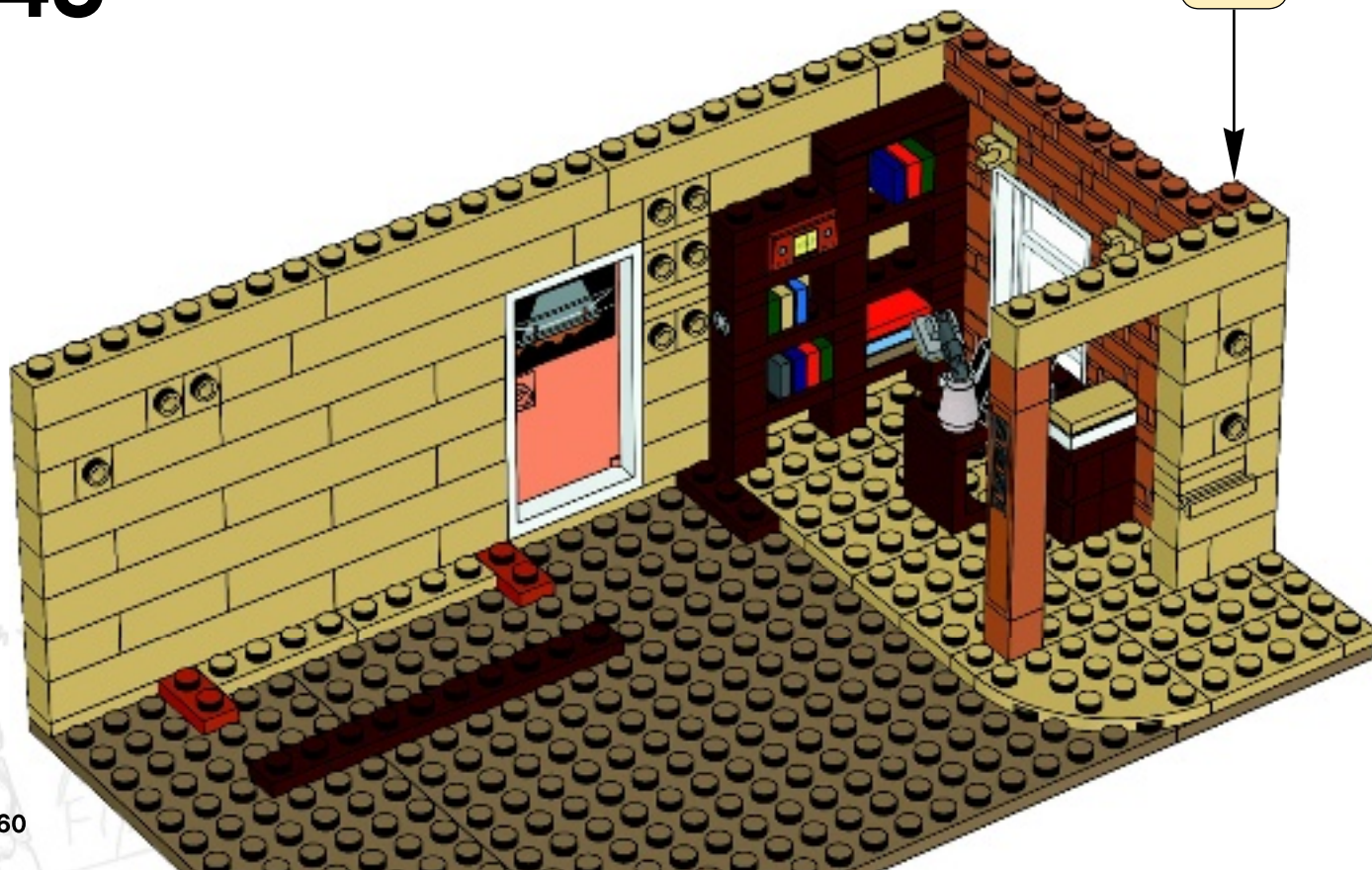


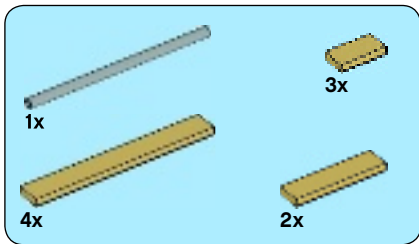
44



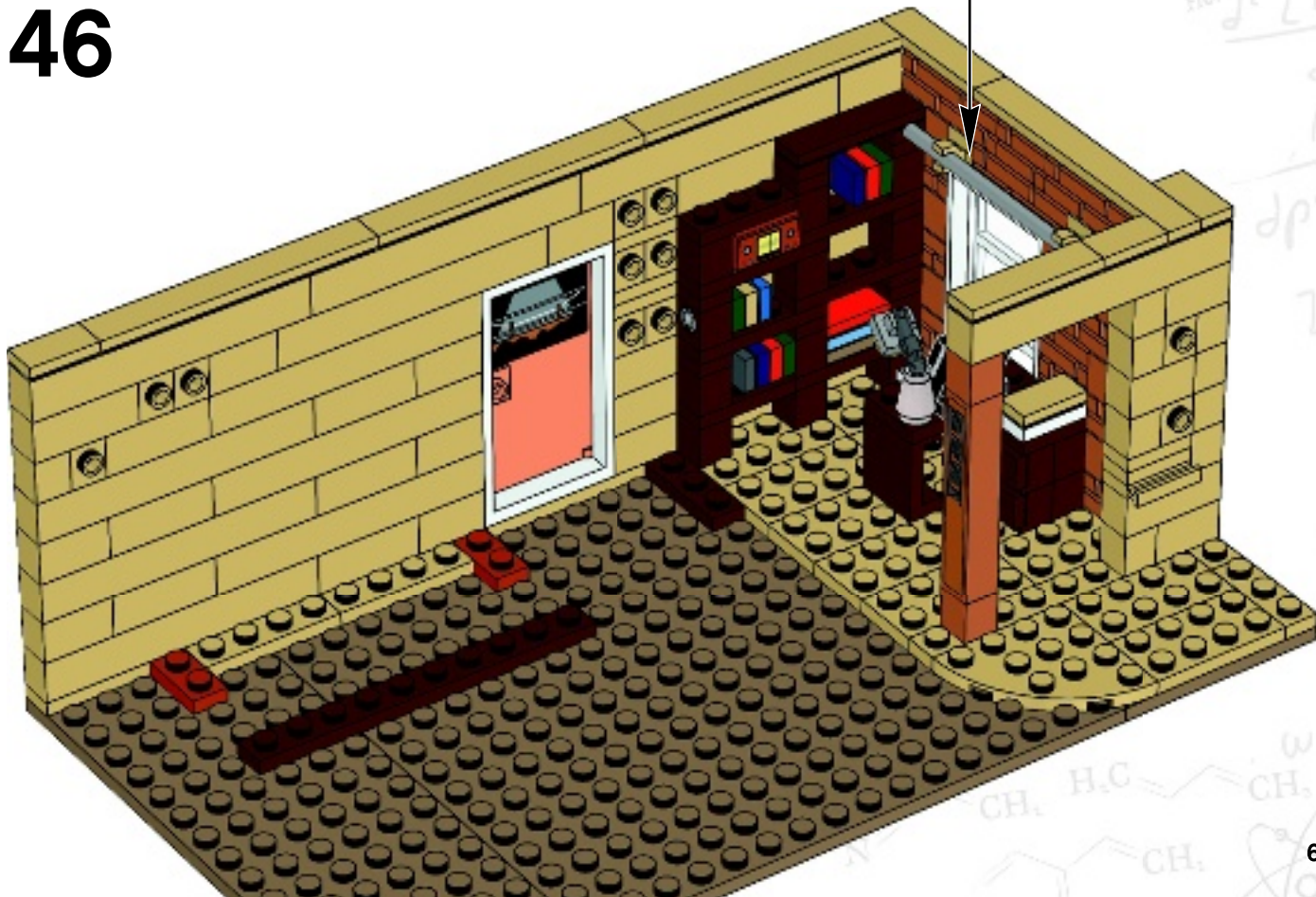
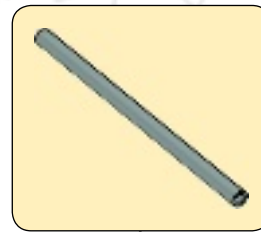


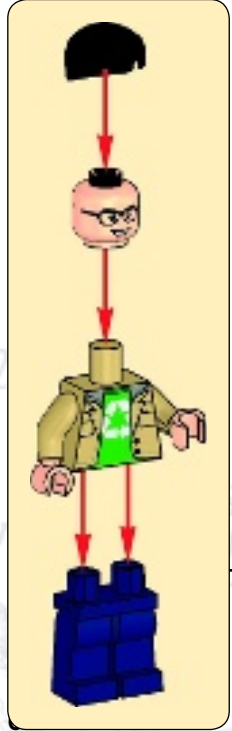
45

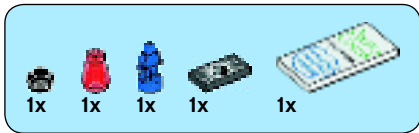




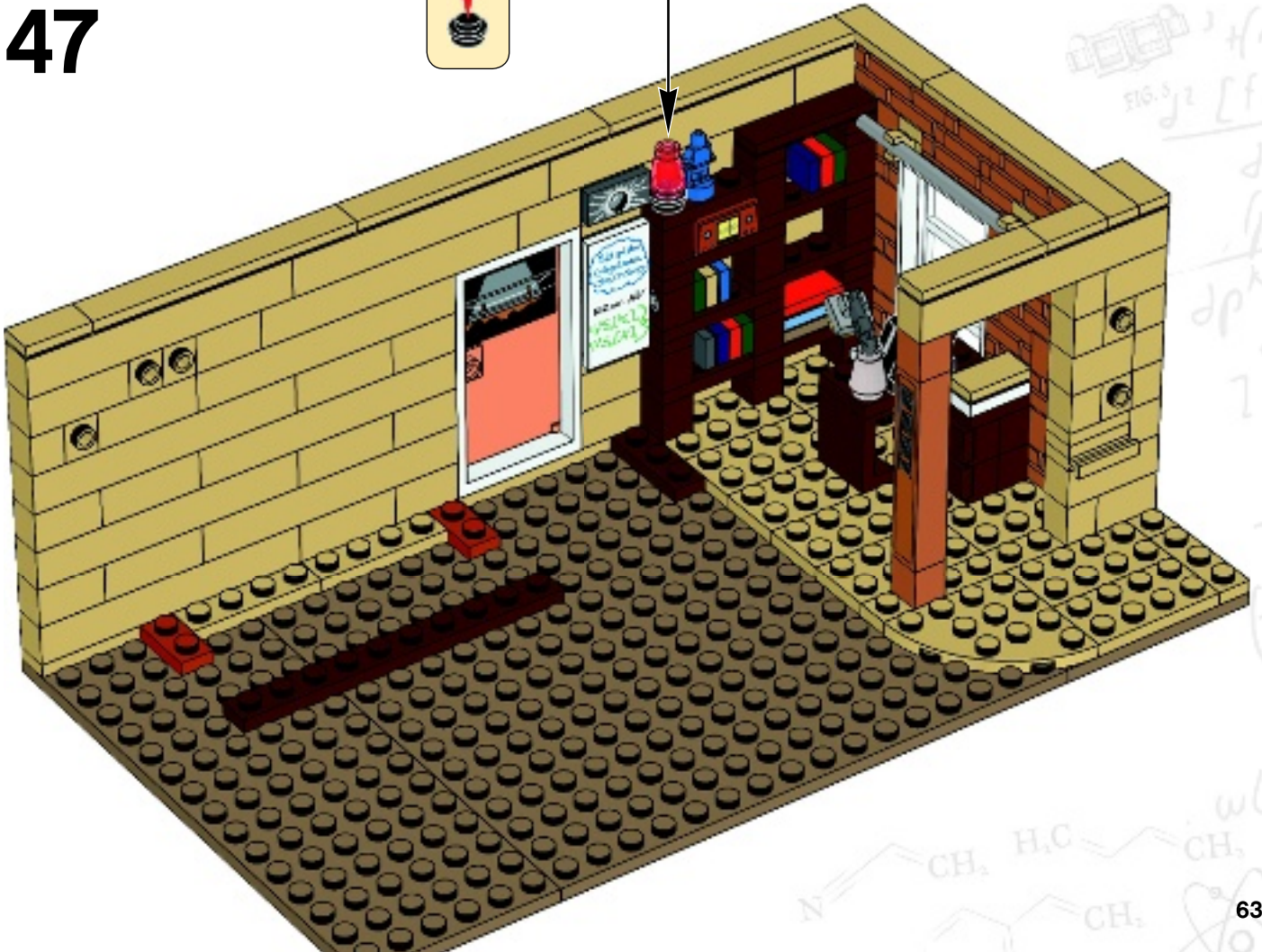
46

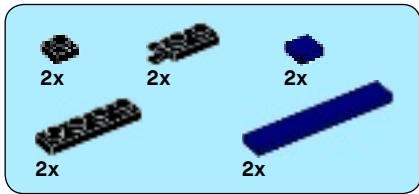




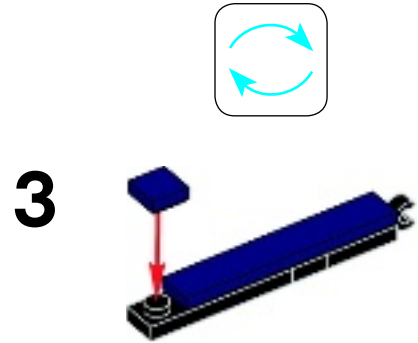
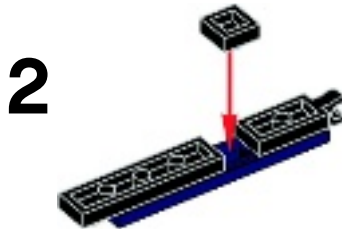
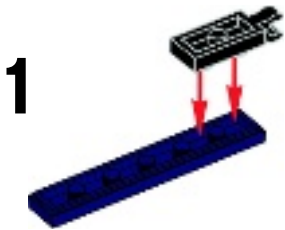


47





48

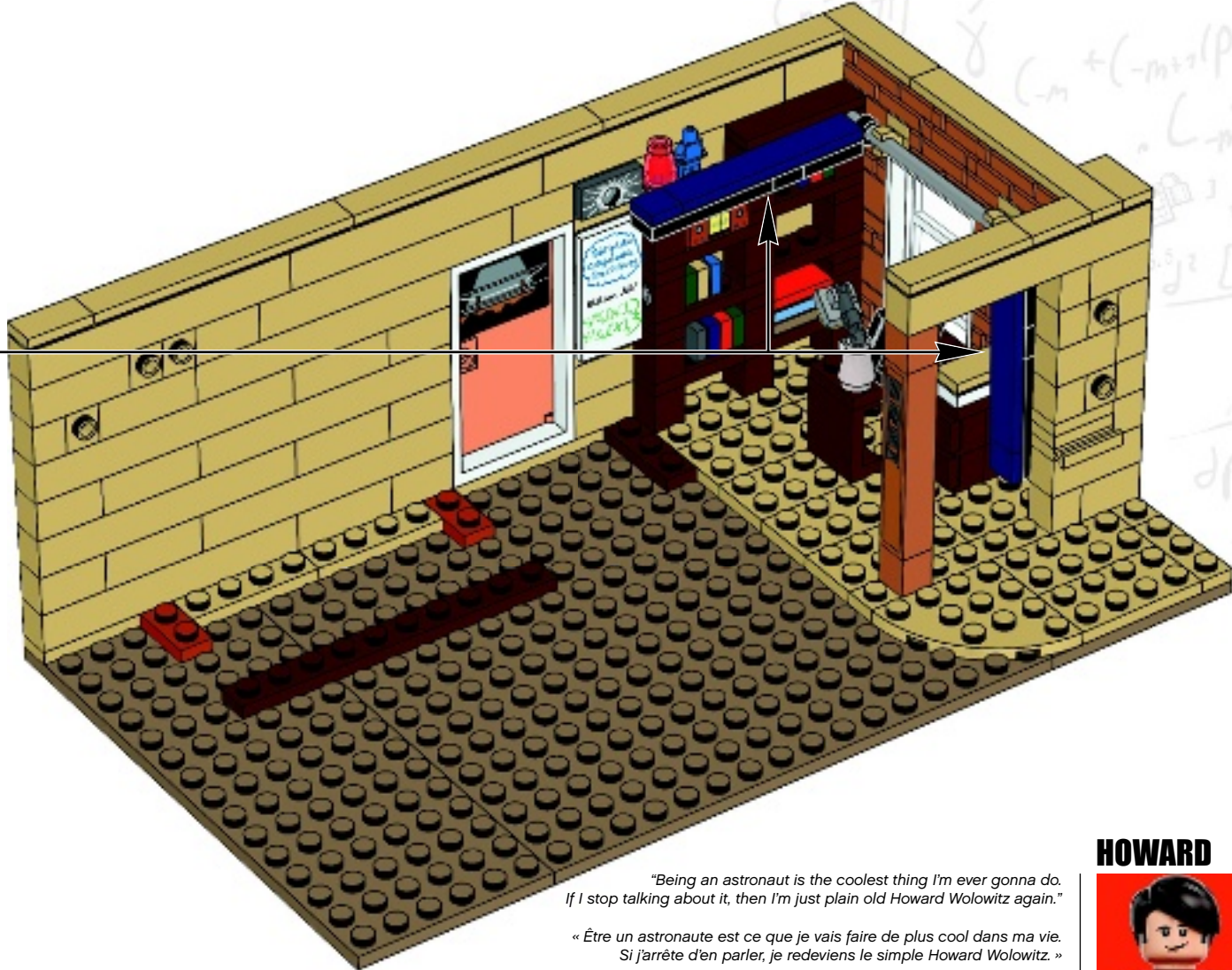


2

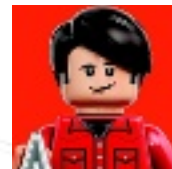
$= p^m$
 $[-m+1]$
 $(p-d)^m$

64

$F(p)(p-d)^m$



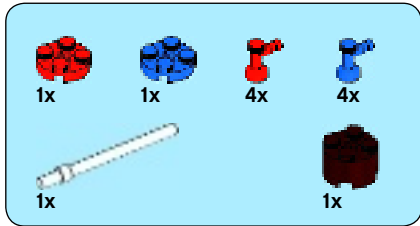
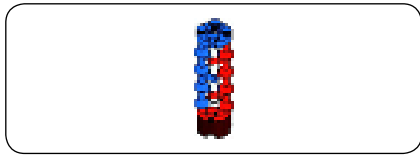
HOWARD



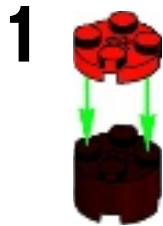
*"Being an astronaut is the coolest thing I'm ever gonna do.
If I stop talking about it, then I'm just plain old Howard Wolowitz again."*

*« Être un astronaute est ce que je vais faire de plus cool dans ma vie.
Si j'arrête d'en parler, je redeviens le simple Howard Wolowitz. »*

*« Ser astronauta es lo mejor que voy a hacer en mi vida.
Si dejo de hablar sobre ello, no seré más que Howard Wolowitz de nuevo. »*



49



2

$$-m+1 = p \cdot m$$
$$\frac{p^3}{F(p)(p-2)^m}$$

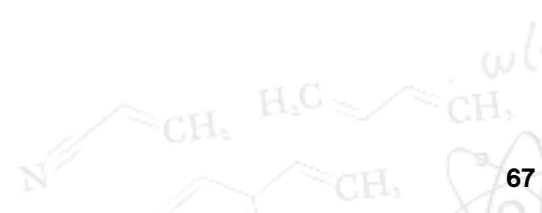
4

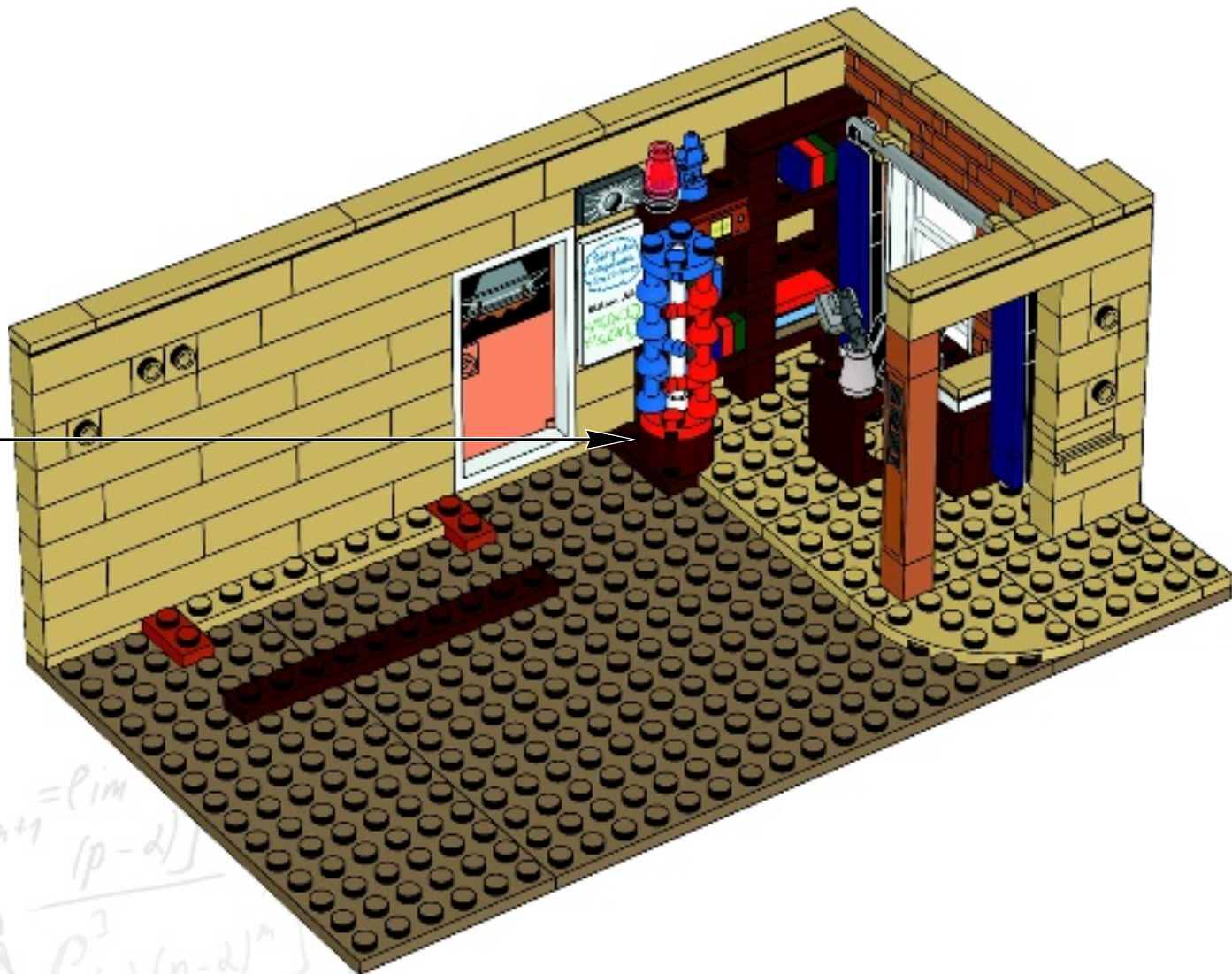


5



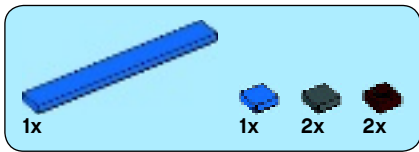
6



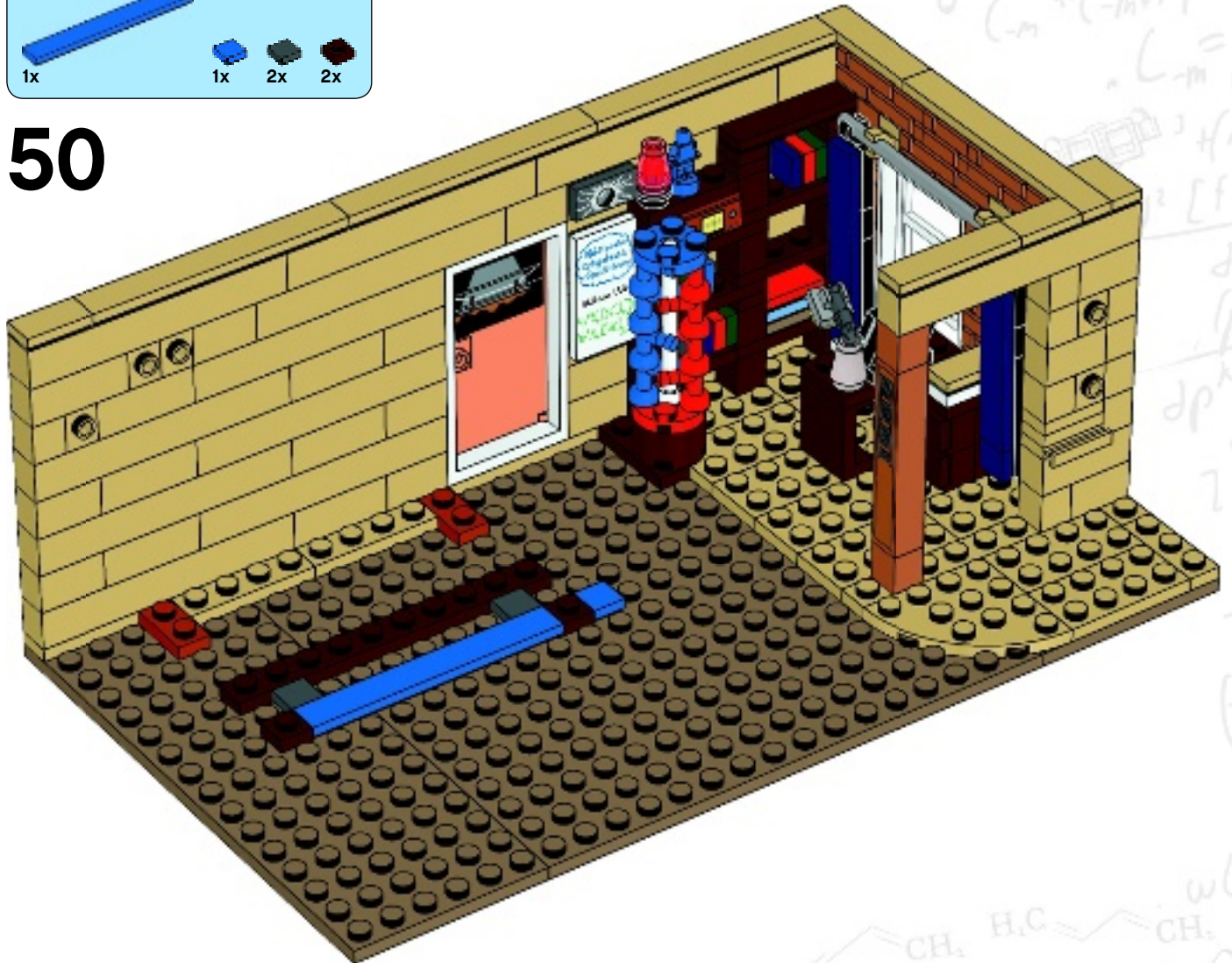


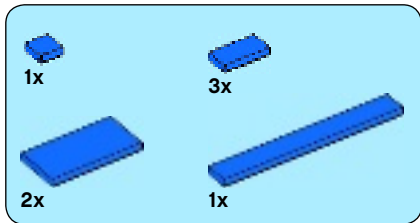
2

$= \frac{p!m}{(p-d)!}$
 $F(p)(p-d)^m$

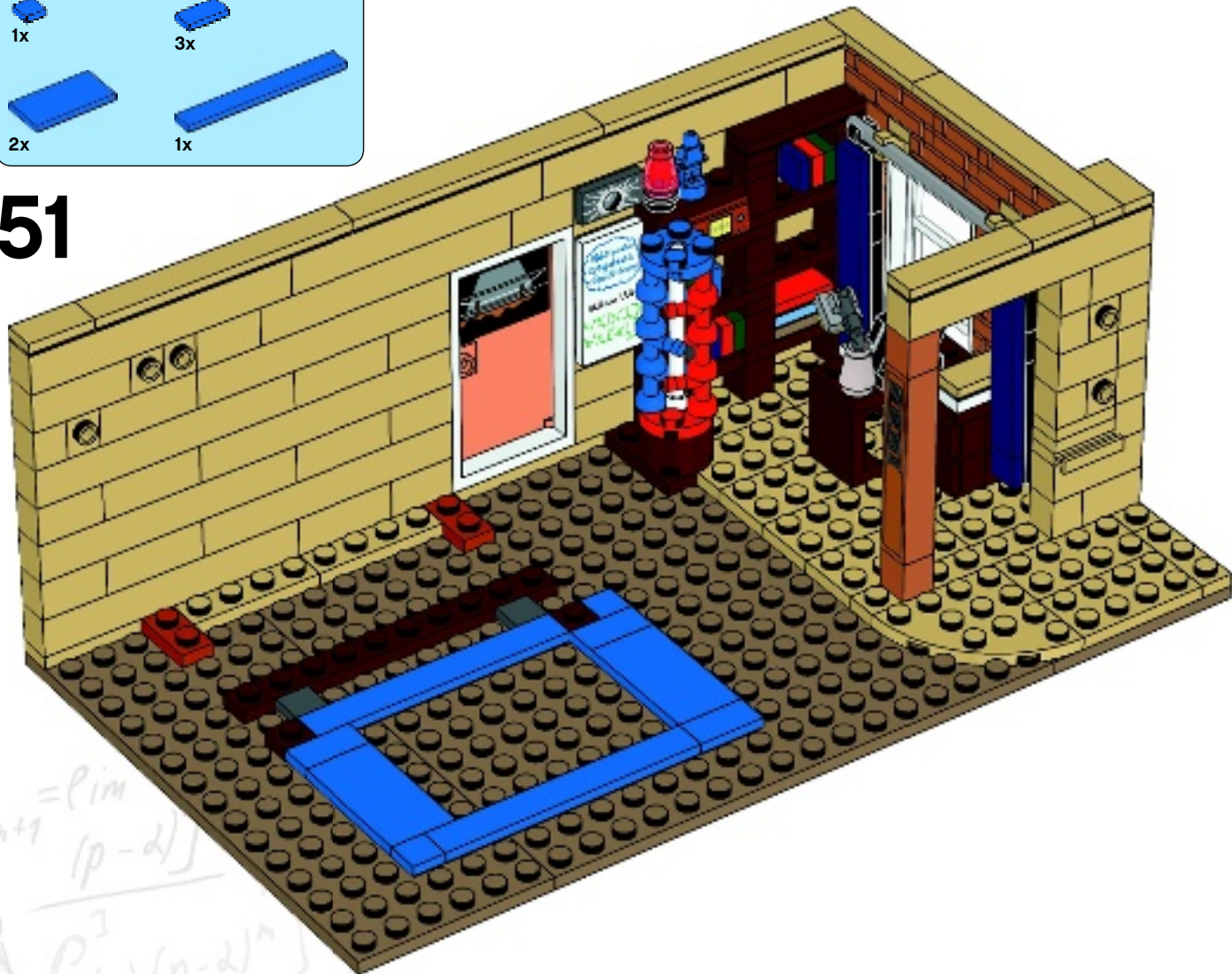


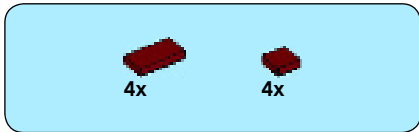
50



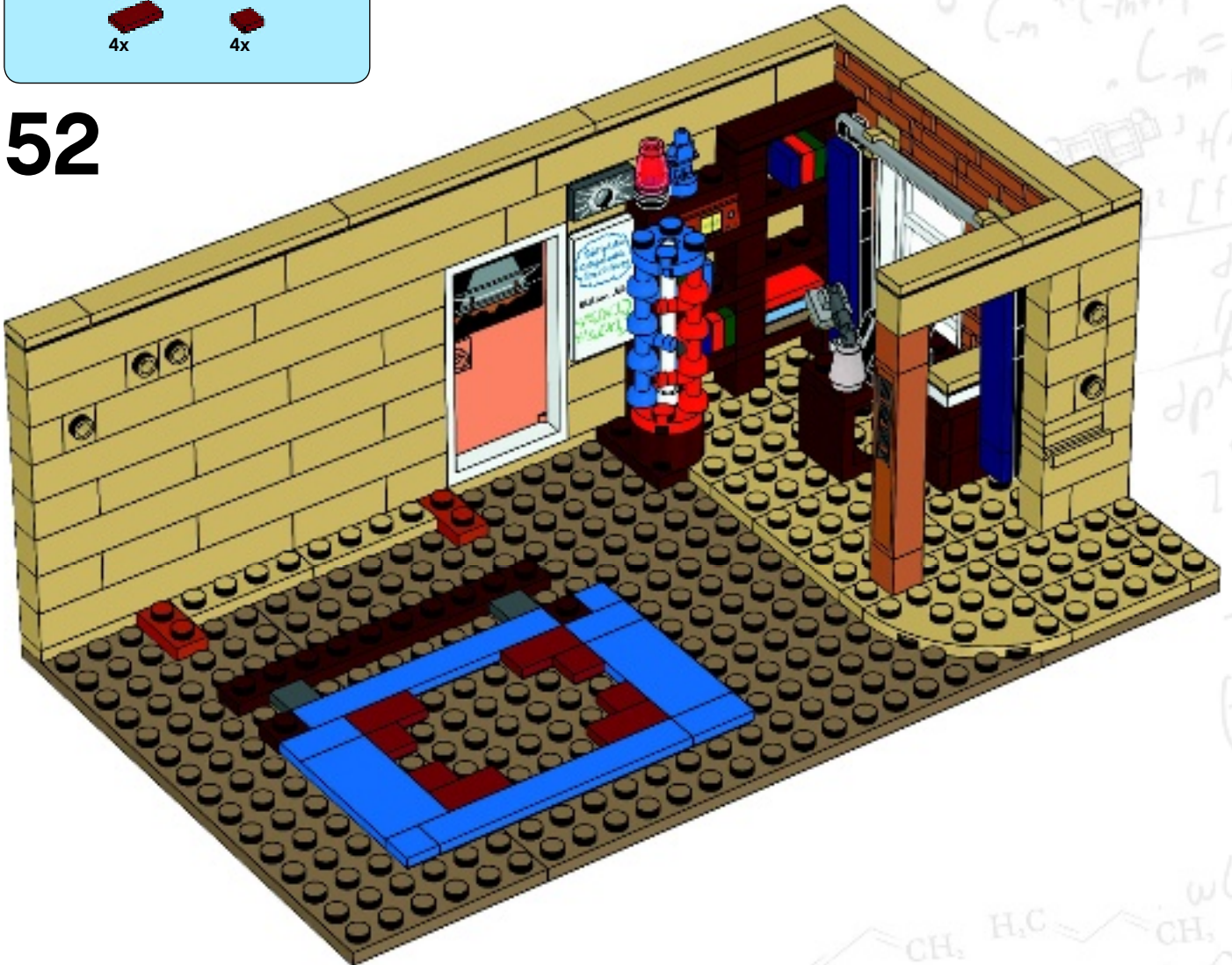


51



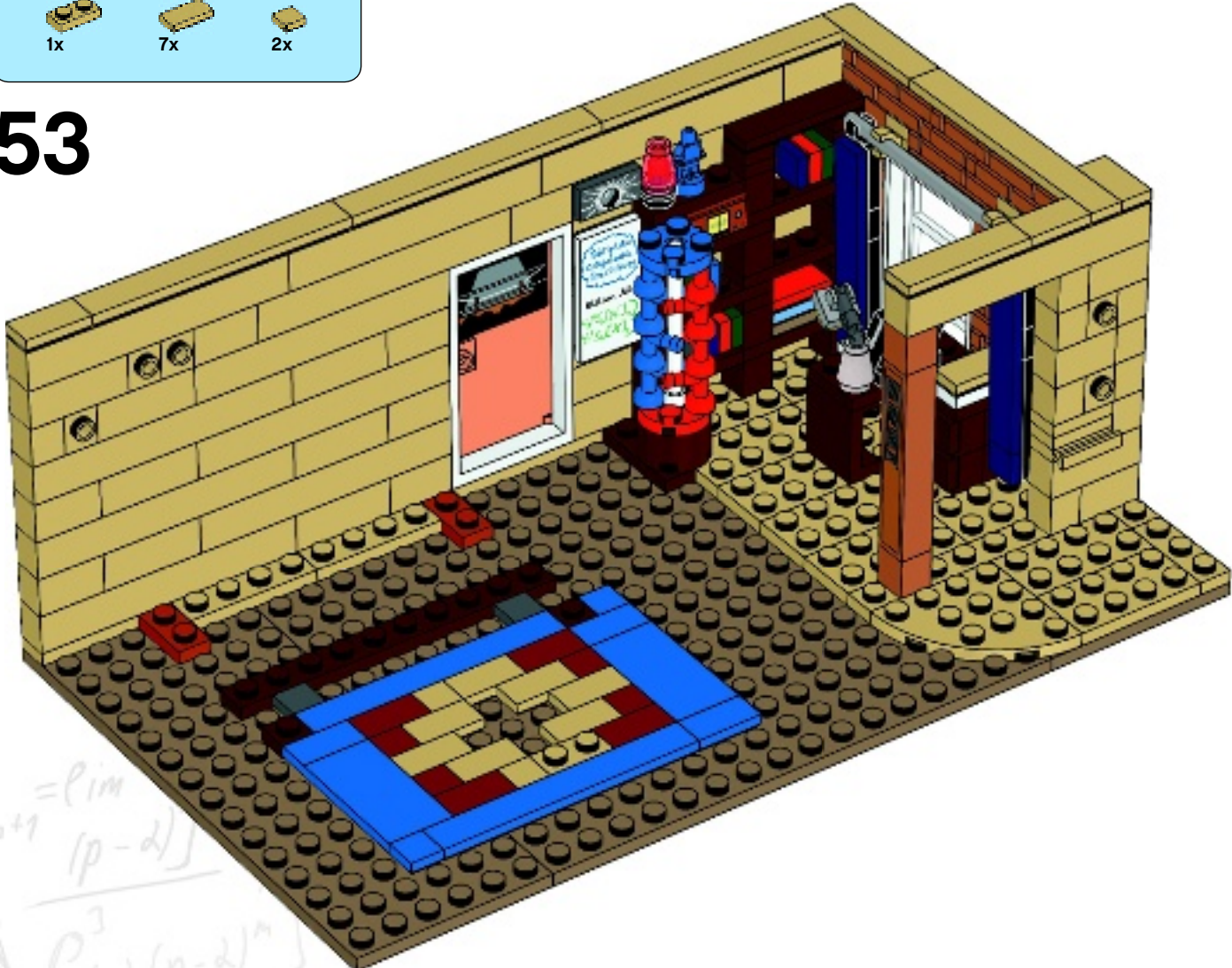


52



1x 7x 2x

53



2

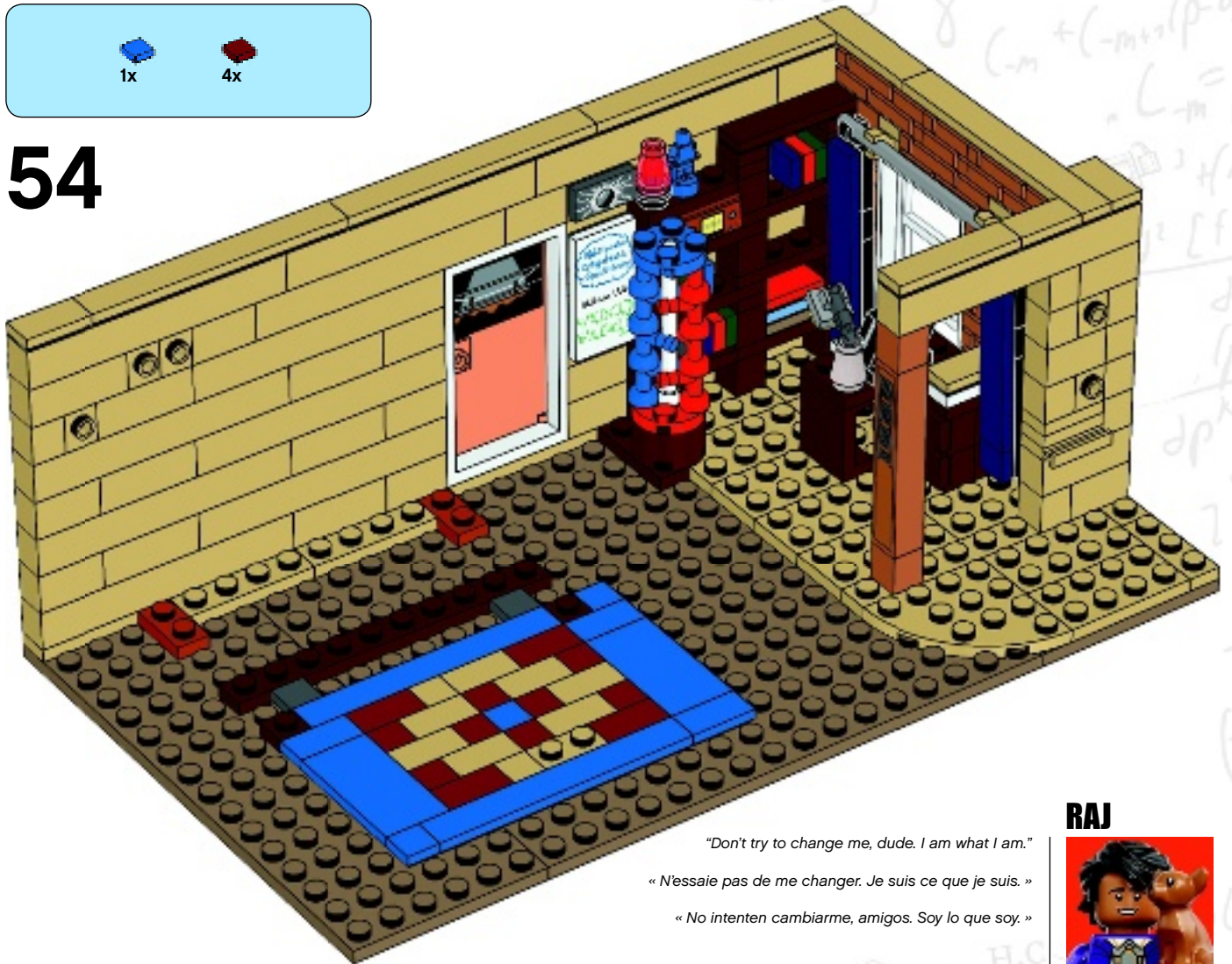
$= \frac{p!}{(p-d)!}$

$F(p) (p-d)^n$

1x

4x

54







RAJ

"Don't try to change me, dude. I am what I am."

« N'essaie pas de me changer. Je suis ce que je suis. »

« No intenten cambiarme, amigos. Soy lo que soy. »

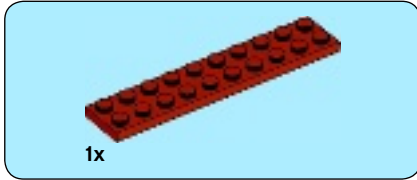


			
4x	1x	2x	1x

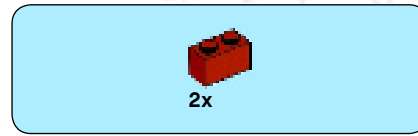
55



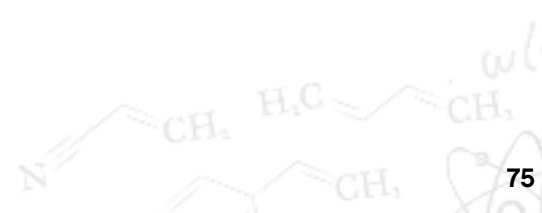
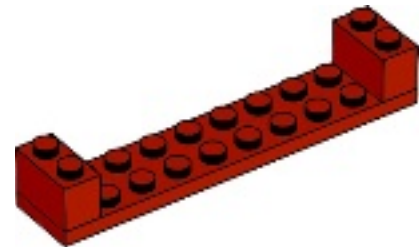
2
 $= \frac{p!}{(p-d)!}$
 $F(p) (p-d)^n$



1



2



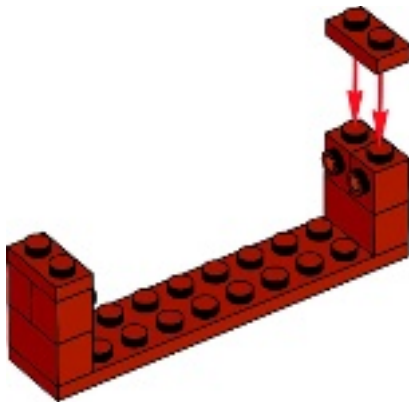


2x



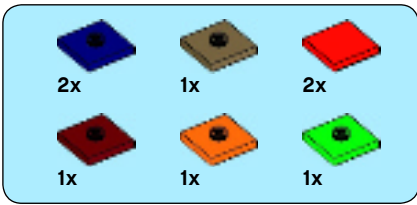
4x

3

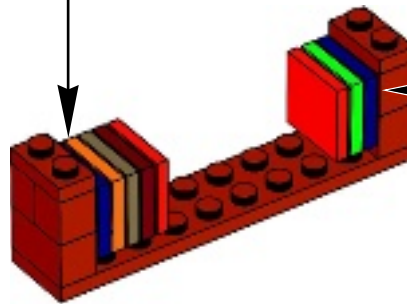
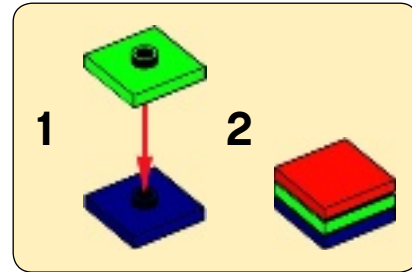
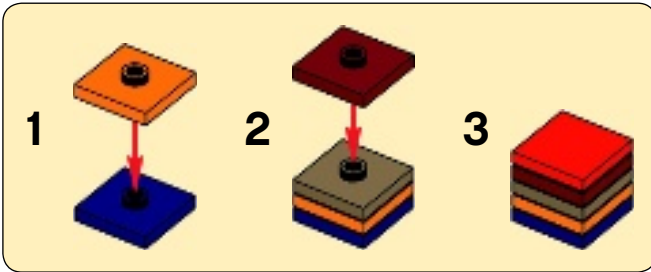


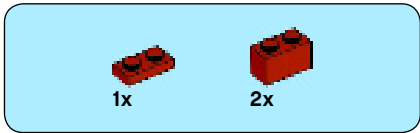
2

$$\frac{p^{m+1} - (p-2)^{m+1}}{p^3 (p-2)^m}$$

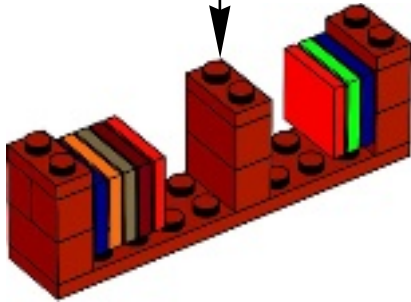
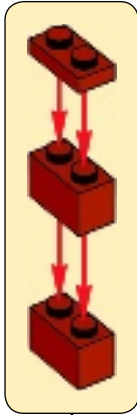


4





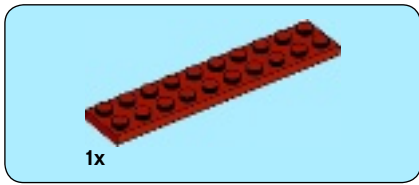
5



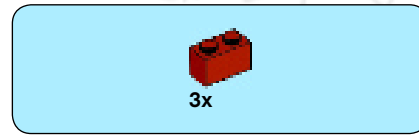
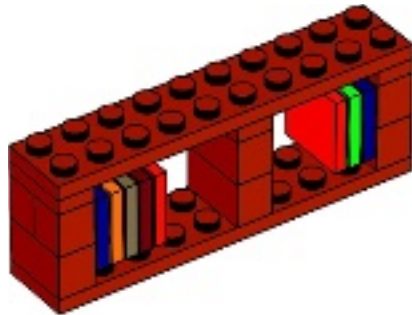
2

$$= \frac{p^{m+1} - (p-2)^{m+1}}{p^3 (p-2)^m}$$

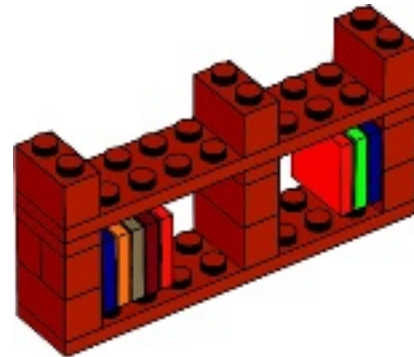
78



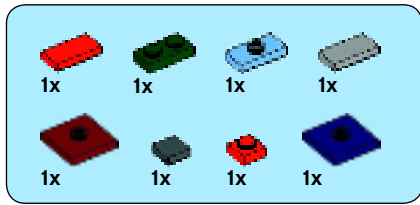
6



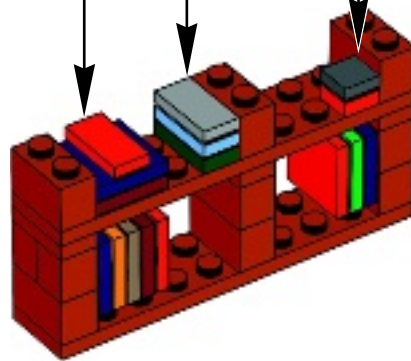
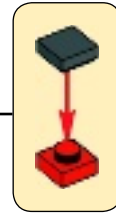
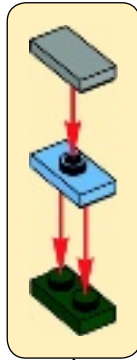
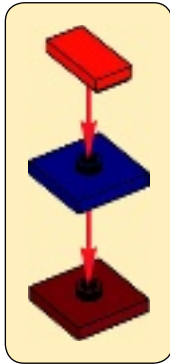
7



$(n-2)!!$
 $(-m + (-m+2)(p-q) + \dots$
 $L = l$
 $L = m p =$
FIG. 52 [f/p]
 $\frac{dp}{p}$
 $\frac{dp}{p^{x+1}}$
 $z [$
 $\frac{1}{4}$
 $\frac{1}{4}$
 $\omega(d)$
 $N \equiv \text{CH}_2 = \text{CH}_2$
 $\text{H}_2\text{C} = \text{CH} = \text{CH}_2$
 $\text{CH}_2 = \text{CH} = \text{CH}_2$



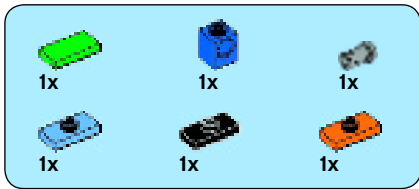
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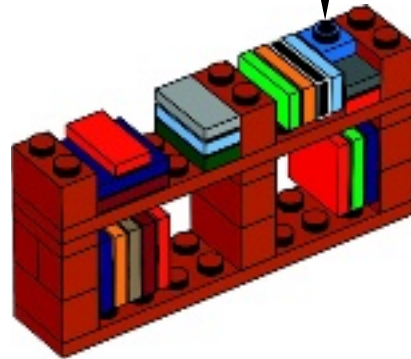
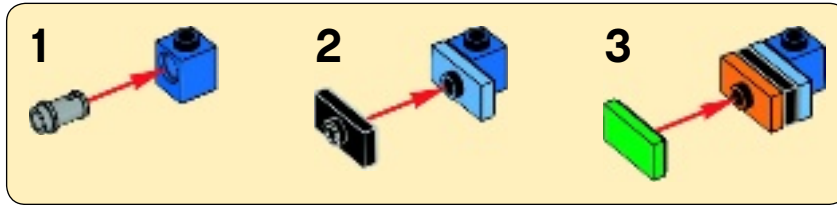
2
$$= \frac{p^{m+1}}{(p-2)^m}$$

$$F(p) = \frac{p^3}{(p-2)^m}$$

80



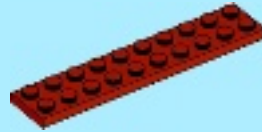
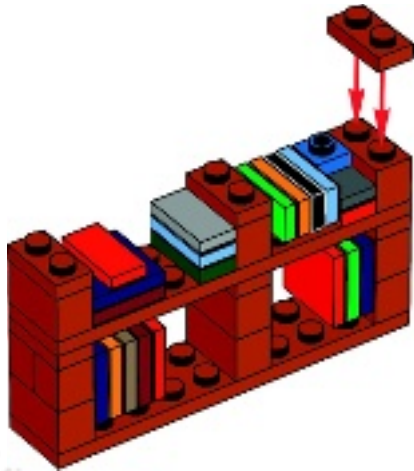
9





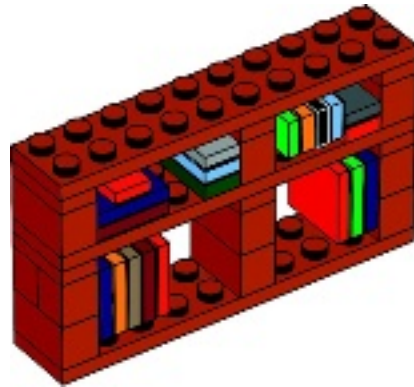
3x

10



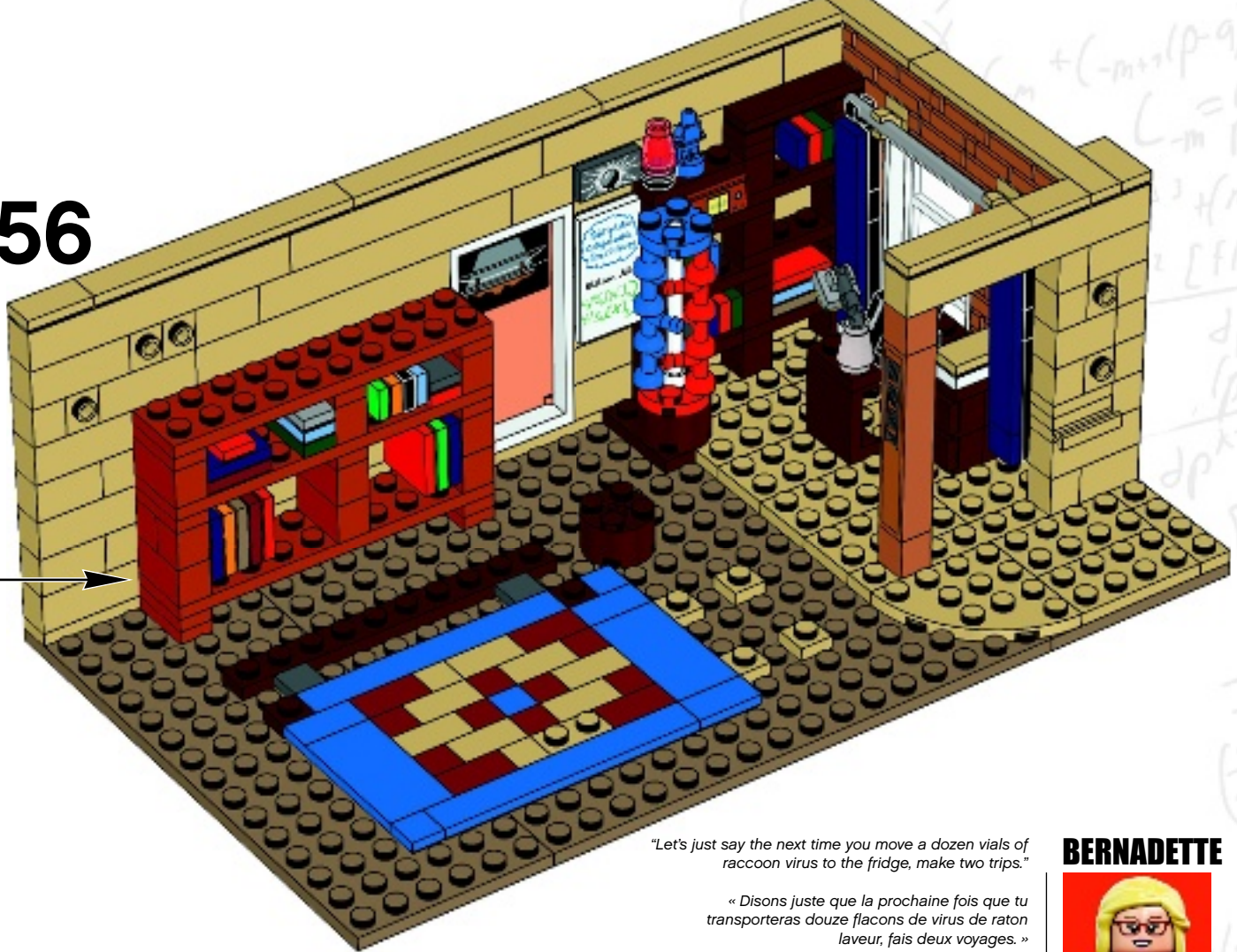
1x

11



2
-m+1 = p im
[p-d]^m;
p³
F(p) [p-d]^m;
m=2

56

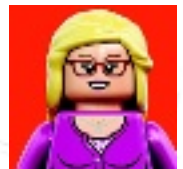


"Let's just say the next time you move a dozen vials of raccoon virus to the fridge, make two trips."

« Disons juste que la prochaine fois que tu transporteras douze flacons de virus de raton laveur, fais deux voyages. »

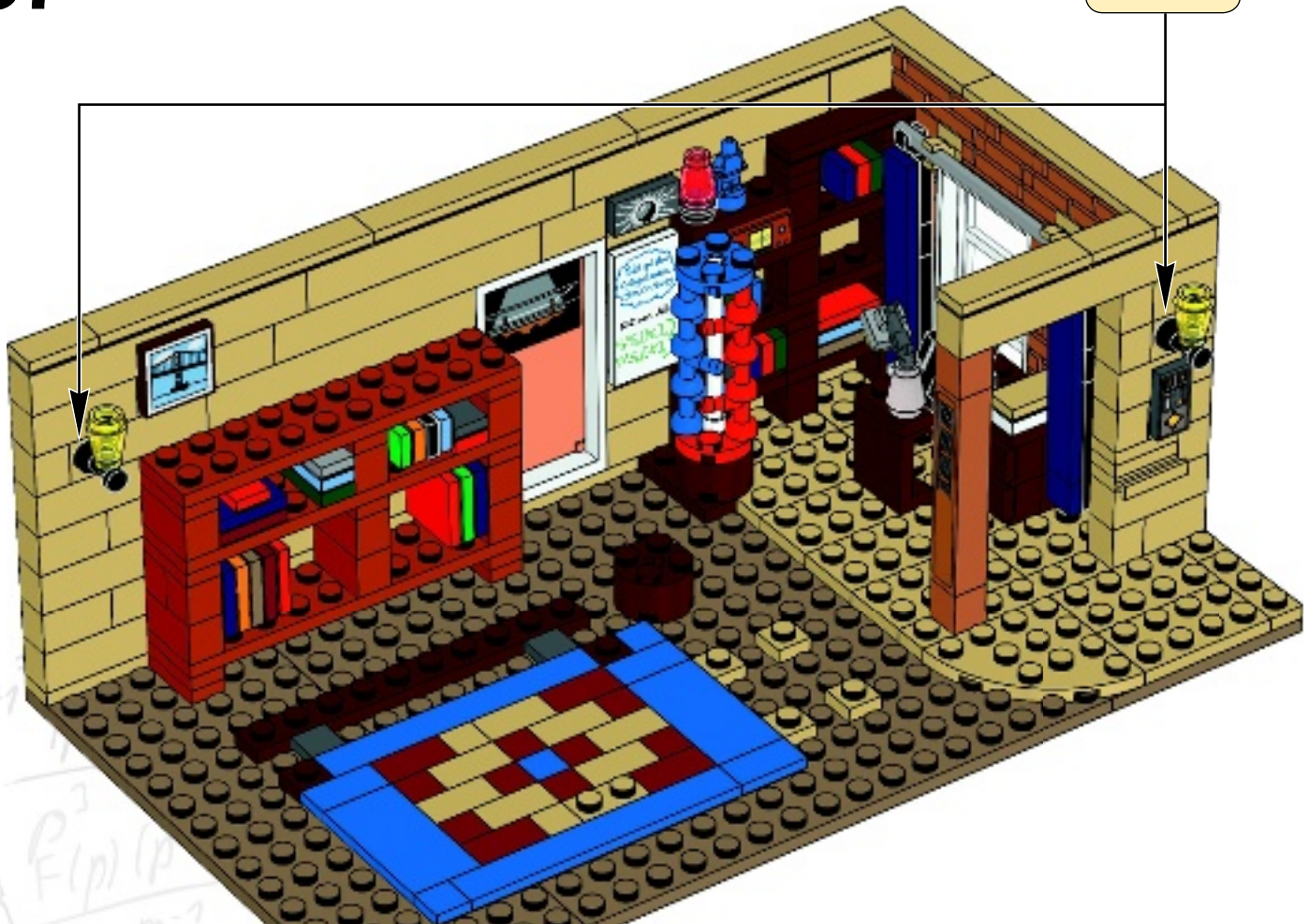
« Digamos que si tienen que mover una docena de viales de virus de mapache a la heladera, es mejor hacer dos portes. »

BERNADETTE





57

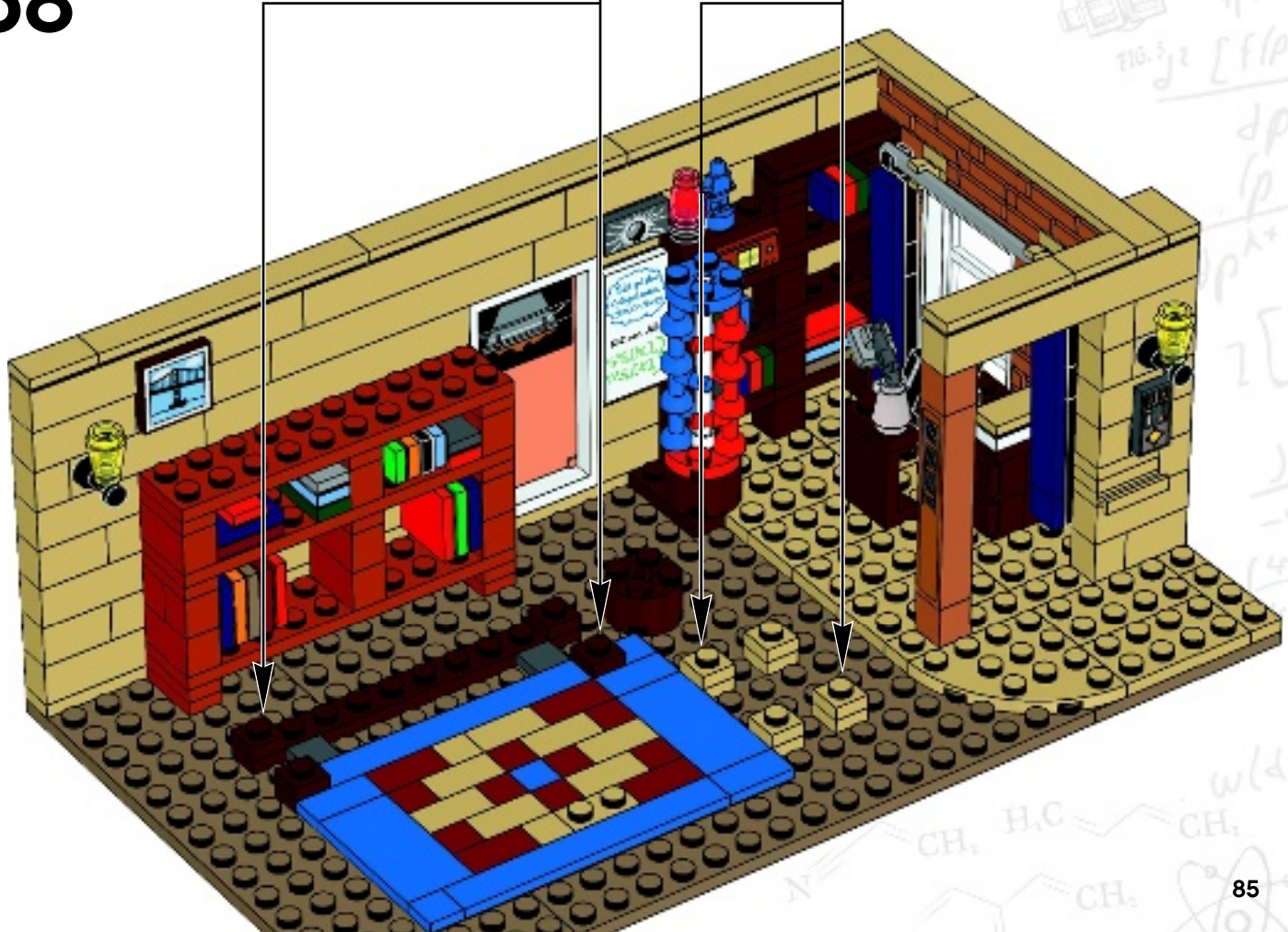


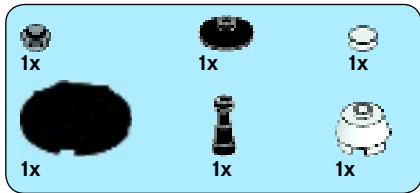
4x 4x

58

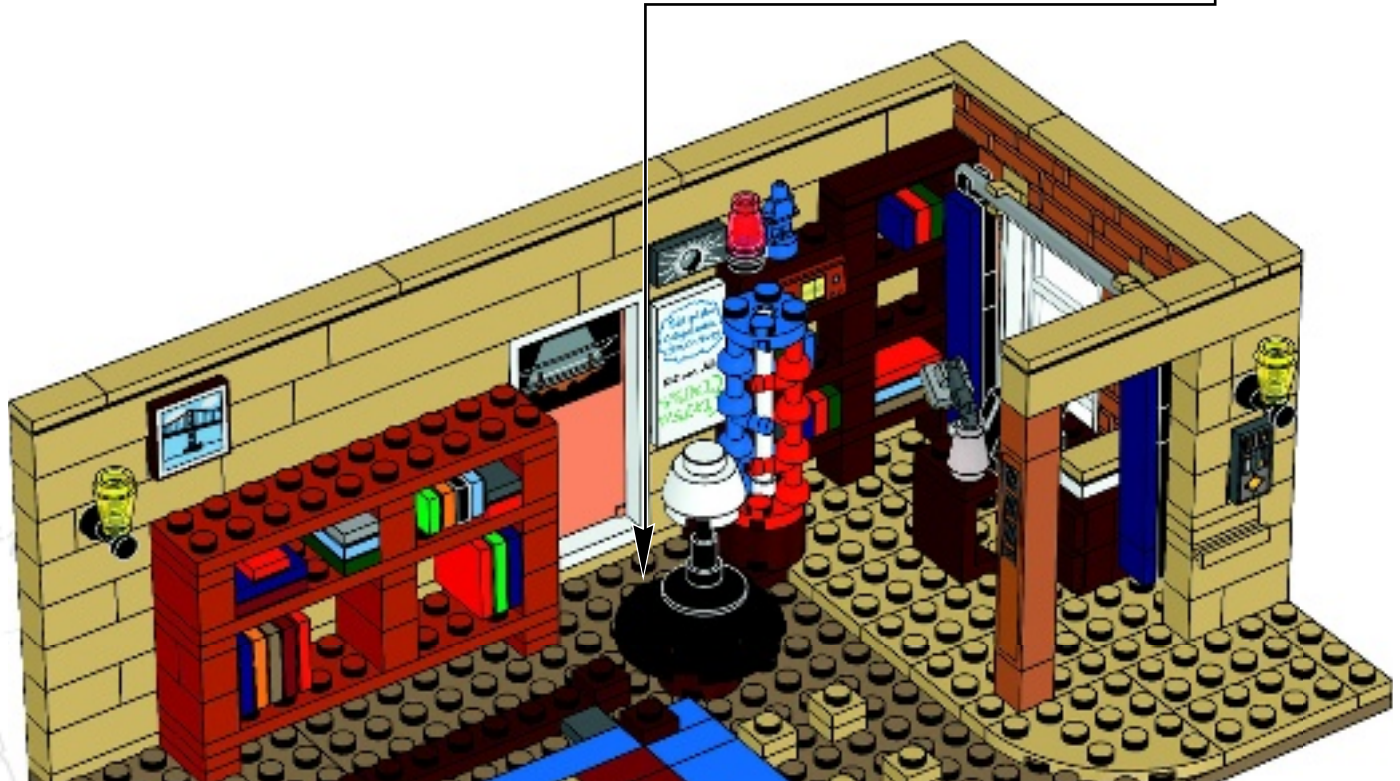
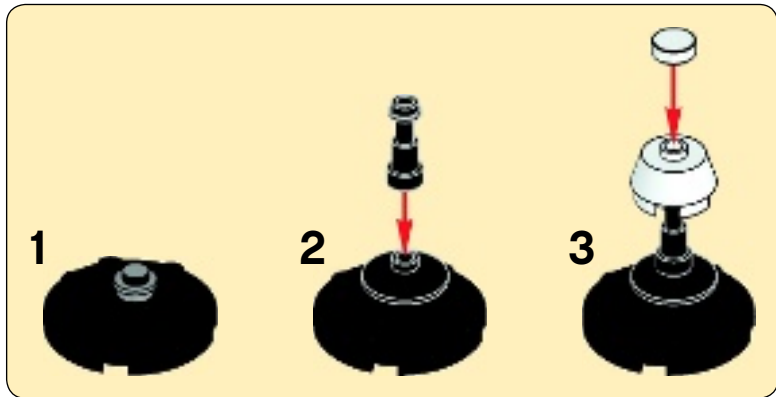
4x

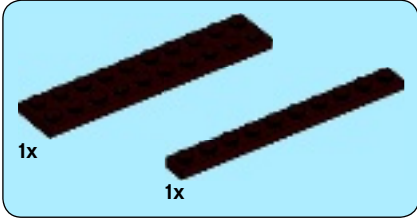
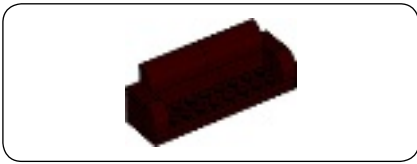
4x



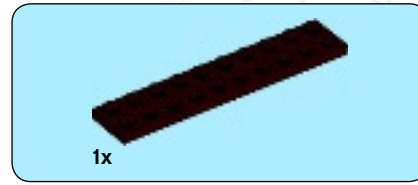
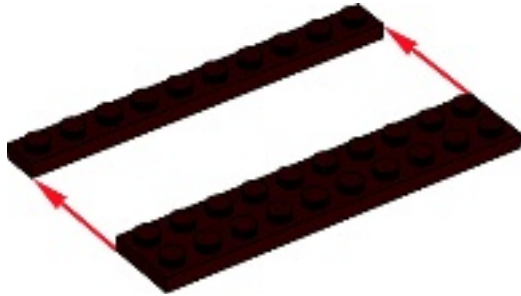


59

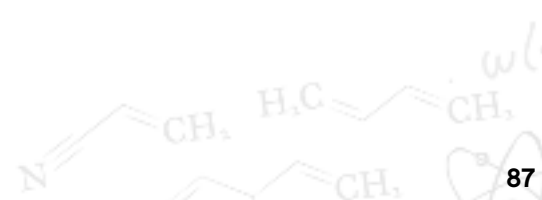
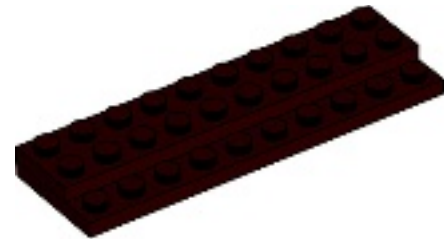


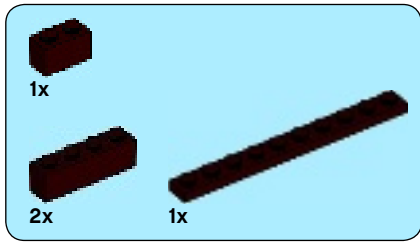


1

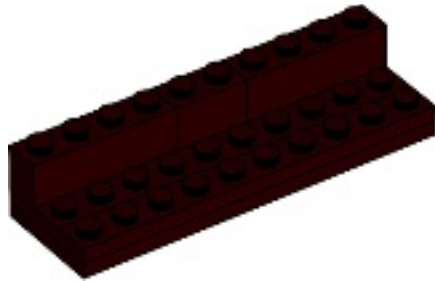


2



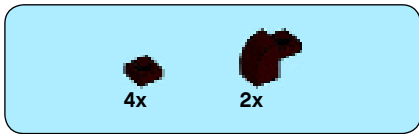


3

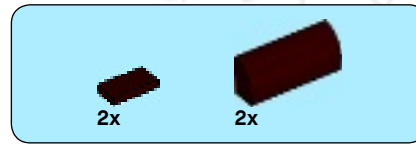
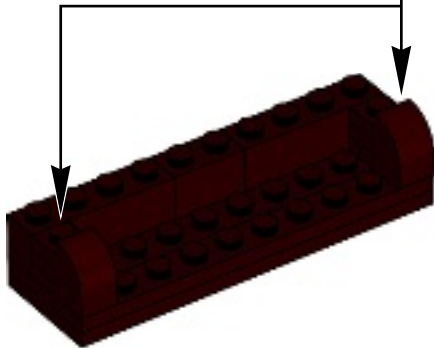
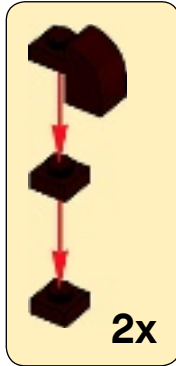


2

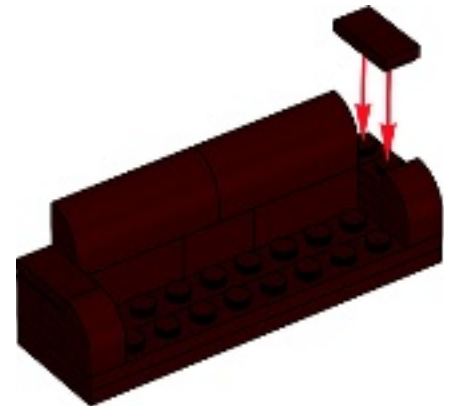
$\dots = \rho^m$
 $\frac{\rho^{-m+1}}{[p-d]^m}$;
 $\frac{\rho^3}{F(p)[p-d]^m}$;
 $m=1$



4



5

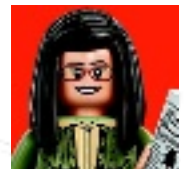


"Actually, our relationship agreement covers a wide array of scenarios. Including career changes, financial instability, intelligent dog uprising."

« En fait, notre contrat relationnel couvre une grande variété de scénarios. Y compris les changements de carrière, l'instabilité financière et le dressage intelligent d'un chien. »

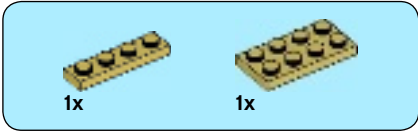
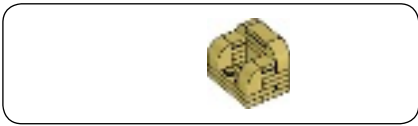
« En realidad, nuestro acuerdo de relación cubre una gran variedad de escenarios. Incluyendo cambios de carrera, inestabilidad financiera y desarrollo de perros inteligentes. »

AMY

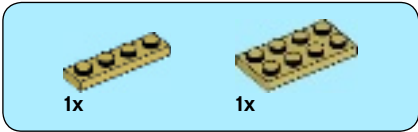
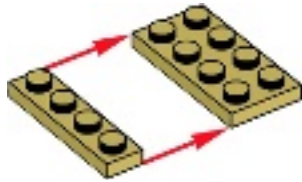


60

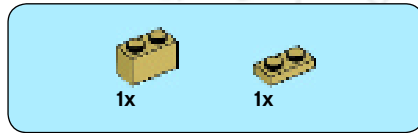
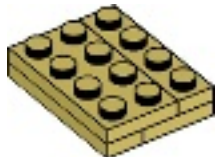




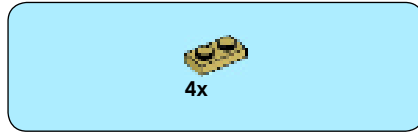
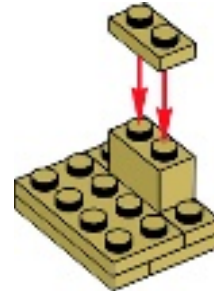
1



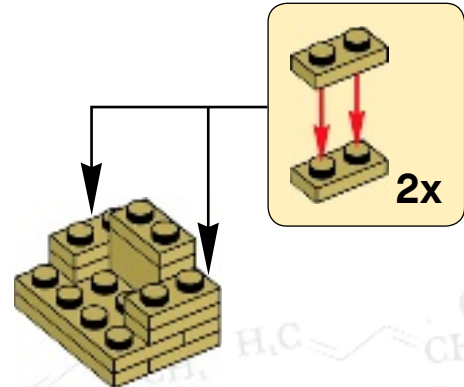
2



3



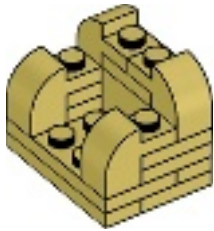
4





4x

5

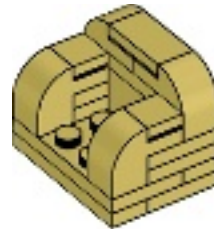


1x



2x

6



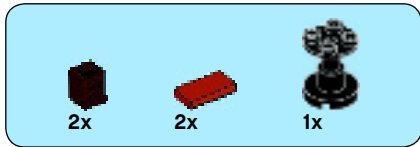
2

$$= \frac{p^{m+1}}{(p-2)^m}$$

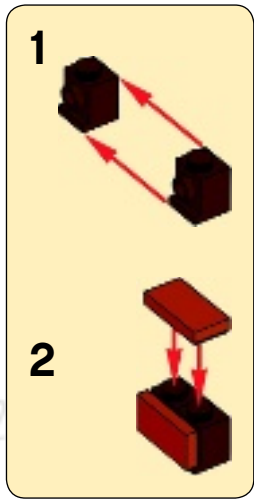
$$F(p) = \frac{p^3}{(p-2)^m}$$

61

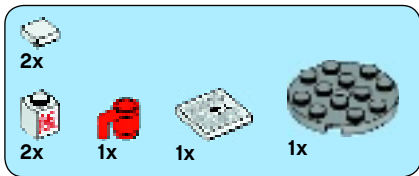




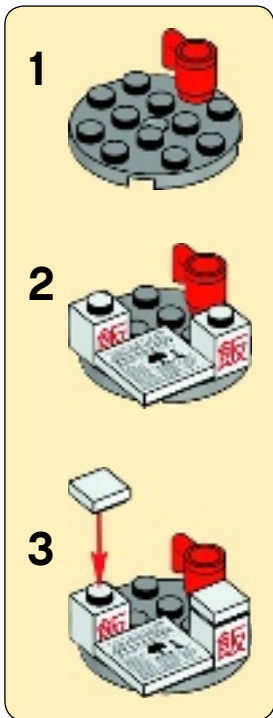
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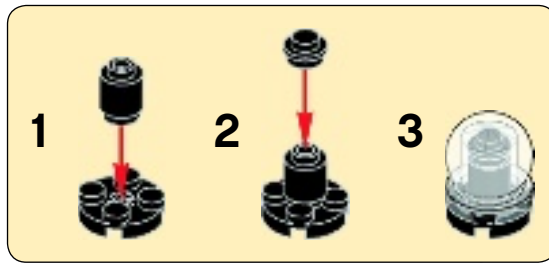
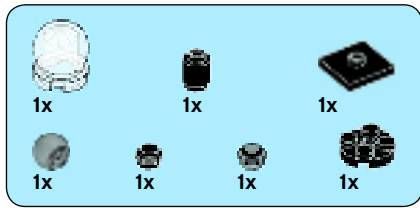


$$-m+1 = p \cdot m$$
$$\frac{1}{(p-2)^m}$$
$$F(p) (p-2)^m$$

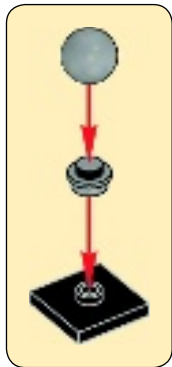


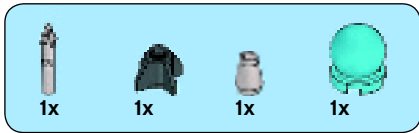
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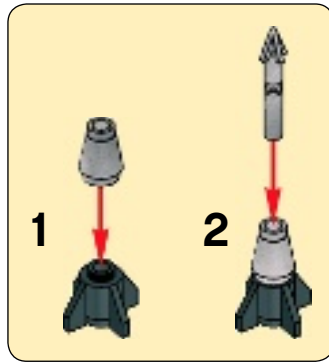


64



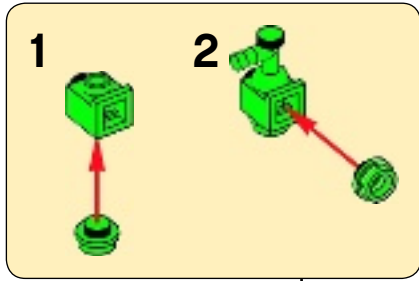


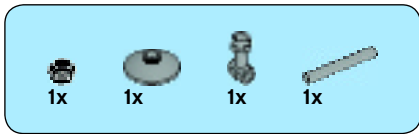
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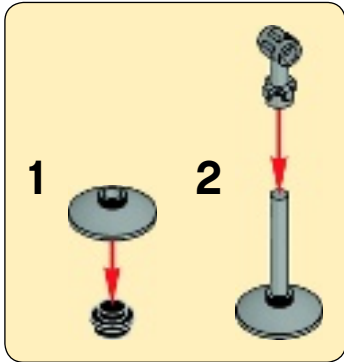
- 
1x
- 
1x
- 
1x
- 
1x
- 
1x
- 
1x

66



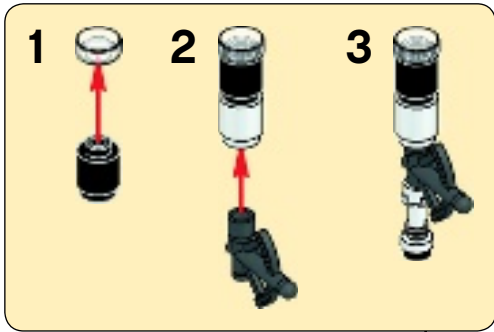


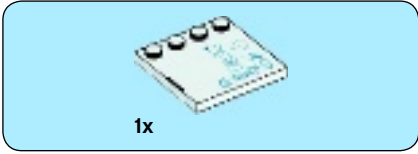
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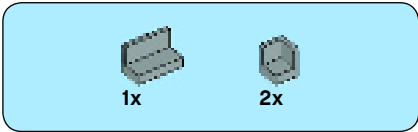
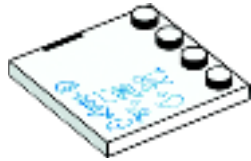


68

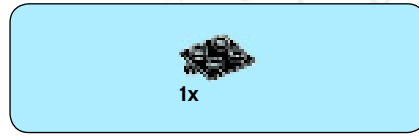
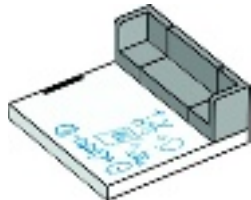




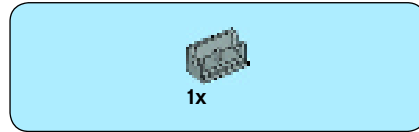
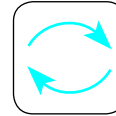
1



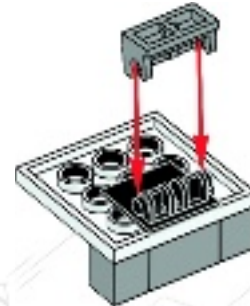
2

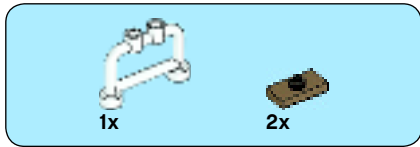


3

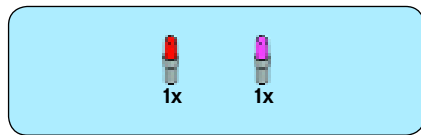
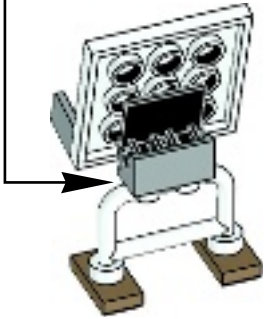
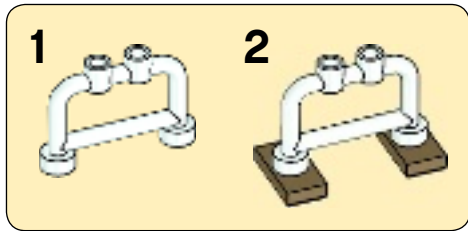


4

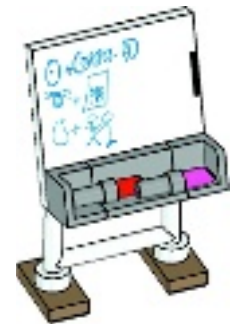
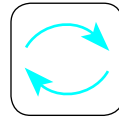




5



6



2

$= P(m)$

$[-m+1$

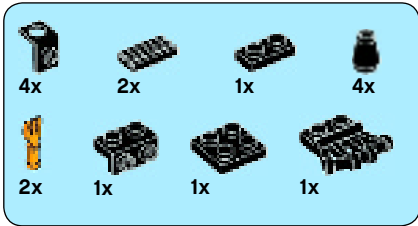
$(p-2)^m]$

P^3

$F(p)(p-2)^m]$

69





70



1



2



3

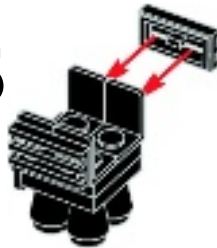


2
$$\frac{-m+1}{(p-2)^2} = \frac{p^3}{F(p)(p-2)^m}$$

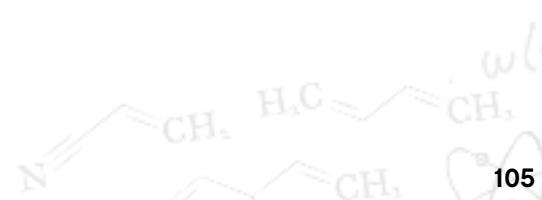
4

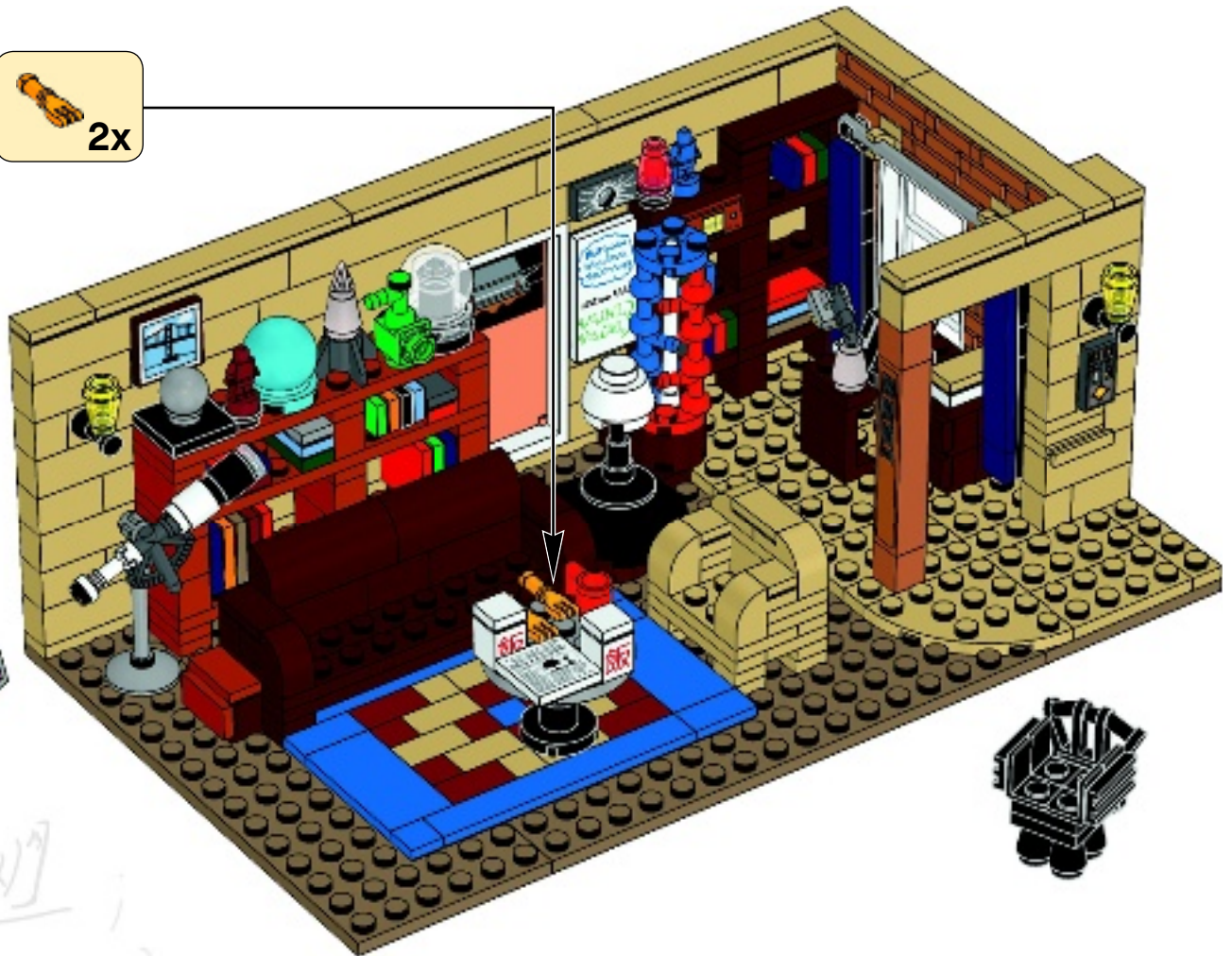


5



6







THE DESIGNERS

“Knock knock knock Alatariel, knock knock knock Alatariel, knock knock knock Alatariel...”

Glen Bricker (Glen Wadleigh) had to “pull a Sheldon” for months to convince Alatariel (Ellen Kooijman) that *The Big Bang Theory* LEGO® set she built would make a great LEGO Ideas project. “As a fan of the show I had built the set to have a fun display piece on my shelf. I didn’t think it would stand a chance at being produced, but Glen was certain this would be a hit.”

The real-life scientist (Ellen) and programmer/engineer (Glen), who became friends through the LEGO Ideas platform (formerly Cuusoo), decided to team up and give the popular show they both very much relate to an official tribute in LEGO form. “Our complementary talents enabled a fruitful collaboration, with Glen in charge of minifigure development and project promotion, and me taking care of set design.”





IDEAS

A WHOLE UNIVERSE OF INNOVATIVE LEGO® IDEAS

Do you have an exciting idea for a LEGO® model? Then why not make it into a LEGO Ideas project? You can share your product concept on lego.ideas.com and see what other people think about it.

If your project gains 10,000 supporters, it will automatically qualify for the quarterly LEGO Review. This is where we take an in-depth look at the most popular projects and carefully evaluate them to discover the idea with the most potential. If your project makes it through the review, it will become an official LEGO product.

There are tens of thousands of active members, and thousands of product ideas on LEGO Ideas – several of which have become hit LEGO sets! So take a look, sign up, and support your favorite ideas, or even better: upload your own!

LEGO.COM/IDEAS



LES DESIGNERS

« Toc-toc-toc Alatarriel, toc-toc-toc Alatarriel, toc-toc-toc Alatarriel... »

Glen Bricker (Glen Wadleigh) a dû imiter Sheldon pour convaincre Alatarriel (Ellen Kooijman) que l'ensemble *The Big Bang Theory* LEGO® qu'elle avait construit serait un projet LEGO Ideas génial. « En tant que fan de la série, j'avais construit l'ensemble pour avoir une pièce amusante à exposer sur mon étagère. Je ne pensais pas qu'il aurait une chance d'être produit, mais Glen était certain que ce serait un succès. »

La vraie scientifique (Ellen) et le programmeur/ingénieur (Glen), qui sont devenus amis grâce à la plateforme LEGO Ideas (auparavant Cuusoo), ont décidé de faire équipe et de rendre un hommage officiel sous forme LEGO à la série populaire qu'ils aiment tous les deux. « Nos talents complémentaires ont permis une collaboration fructueuse, Glen étant chargé du développement des figurines et de la promotion du projet et moi de la conception de l'ensemble. »





IDEAS

TOUT UN UNIVERS D'IDÉES LEGO® NOVATRICES

As-tu une idée de modèle LEGO® passionnante ? Alors pourquoi ne pas en faire un projet LEGO Ideas ? Tu peux partager ton concept de produit sur lego.ideas.com et voir ce que les autres en pensent.

Si ton projet obtient l'appui de 10,000 personnes, il sera automatiquement qualifié pour l'examen LEGO trimestriel. Cet examen nous permet d'étudier en profondeur les projets les plus populaires et de les évaluer attentivement pour découvrir les idées ayant le plus grand potentiel. Si ton projet passe l'examen, il deviendra alors un produit LEGO officiel.

Il y a des dizaines de milliers de membres actifs et des milliers d'idées de produits sur LEGO Ideas, et plusieurs d'entre elles sont devenues des ensembles LEGO très populaires ! Alors va regarder, inscris-toi et soutiens tes idées préférées. Ou mieux encore : télécharge ton propre projet !

LEGO.COM/IDEAS



LOS DISEÑADORES

«Toc, toc, toc. ¿Alatariel? Toc, toc, toc. ¿Alatariel? Toc, toc, toc. ¿Alatariel?»

Glen Bricker (Glen Wadleigh) tuvo que imitar a Sheldon durante meses para convencer a Alatariel (Ellen Kooijman) de que el set LEGO® *The Big Bang Theory* que había construido sería un proyecto perfecto para LEGO Ideas. «Como fan del show, construí el set para tener algo divertido que mostrar en la estantería. No creí que tuviese ninguna oportunidad de ganar, pero Glen estaba seguro de que sería un éxito».

Ellen (científica en la vida real) y Glen (programador e ingeniero) se conocieron a través de la plataforma LEGO Ideas (antes Cuusoo) y decidieron formar equipo para rendir homenaje oficialmente al popular show, con el que tanto se identificaban, en forma de bricks LEGO. «Nuestros talentos se complementaban y dieron lugar a una fructífera colaboración, con Glen a cargo del desarrollo de las minifiguras y la promoción del proyecto, y yo ocupándome del diseño del set».





IDEAS

TODO UN UNIVERSO DE INNOVADORAS IDEAS LEGO®

¿Tienes una buena idea para un modelo LEGO®?
¿Por qué no convertirla en un proyecto LEGO Ideas?
Puedes compartir tu idea en lego.ideas.com y ver lo que los demás piensan de ella.

Si tu proyecto consigue 10,000 votos, se clasificará automáticamente para la revisión trimestral de LEGO. Es entonces cuando daremos un vistazo a los proyectos más populares y los evaluaremos detenidamente para determinar qué idea tiene más potencial. Si tu proyecto supera la revisión, se convertirá en un producto LEGO oficial.

Hay decenas de miles de miembros activos y miles de ideas en LEGO Ideas (varias de las cuales ya se han convertido en sets LEGO de gran éxito). Ven a dar un vistazo, regístrate y apoya tus ideas favoritas. O aún mejor: ¡envía la tuya!

LEGO.COM/IDEAS





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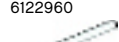
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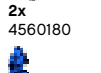
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