

ADI eskola

PK - Pentsamendu
konputazionala garatzen

HH / LH 1. zikloa

2.SAIOA



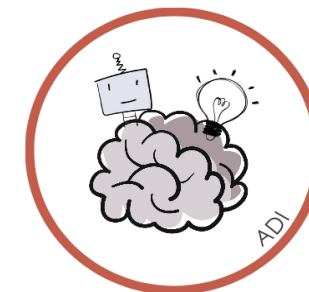
ADI eskola - PK garatzen



Ordutegia: 9:00 - 14:00 (30 ordutako mintegia)

	URRIA	AZAROA	ABENDUA	OTSAILA	MAIATZA
BIZKAIA	9	6	18	5	AZOKA
ARABA/ GIPUZKOA	7	4	16	3	AZOKA

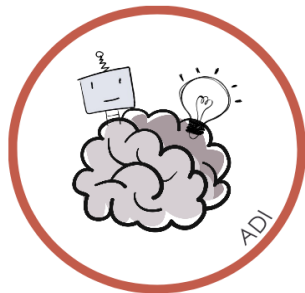
ERREKALDEN HURRENGO MINTEGIA



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2. saioa

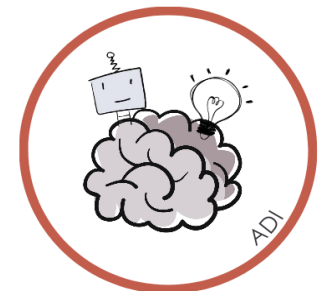
- Informatika desentxufatua
 - Informazioaren irudikapena
 - Kode bitarra
 - Irudiak
 - Programazioa lengoaia
 - Algoritmoa
 - Akatsak hautematea
- LEGO DUPLO
- Laburbildu
- Konpromiso proposamena nola jaso?
- Adimengunea
- Ebaluazioa



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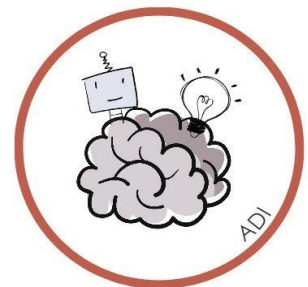
PK-ren oinarriak, gogoratzen dituzu?

[KAHOOT](#)



ADI eskola - PK garatzen

Informatika deskonektatua

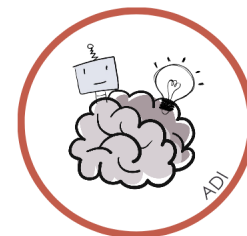


ADI eskola - PK garatzen

Informatika deskonektatua

Ba dago ulertzerik teknologiak nola funtzionatzen duen ordenagailurik edo bestelako gailurik erabili gabe? **BAI**

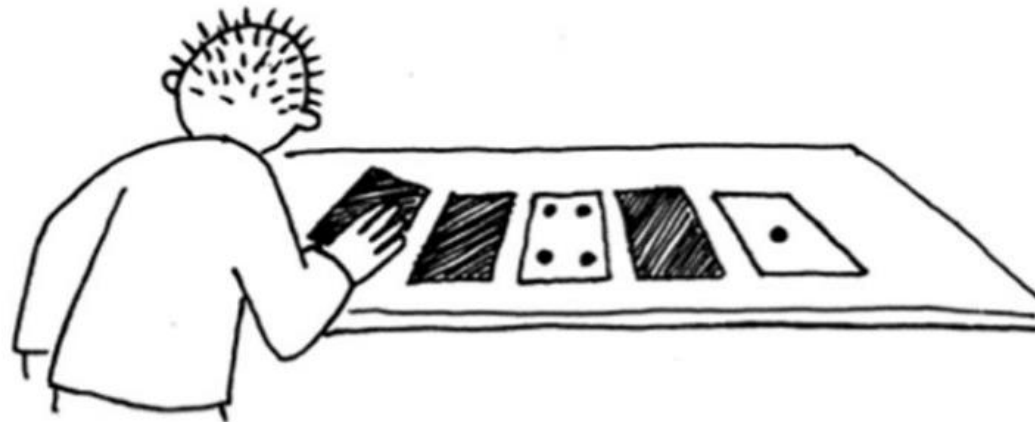
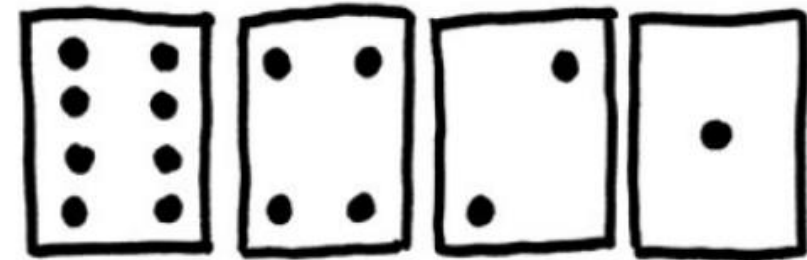
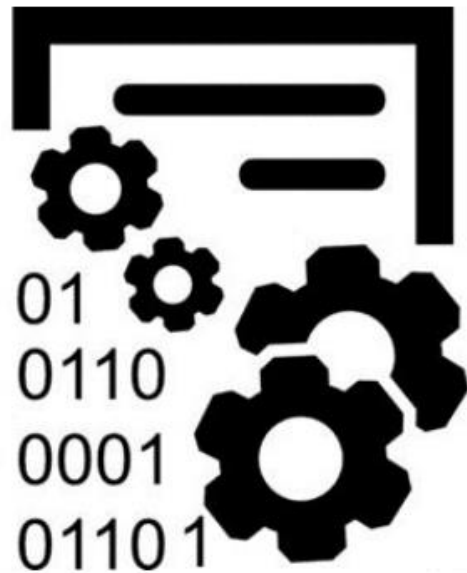
Kontzeptu informatiko asko erabiltzen ditugu egunero, haien oinarria jakin gabe. Dinamiken eta jokoen bidez, teknologiak benetan nola funtzionatzen duen ulertuko dugu.



ADI eskola - PK garatzen

Informazioaren irudikapena

Kode bitarra - kontatzen ikasi

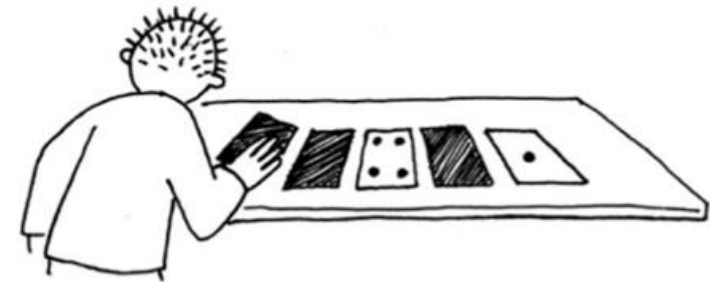
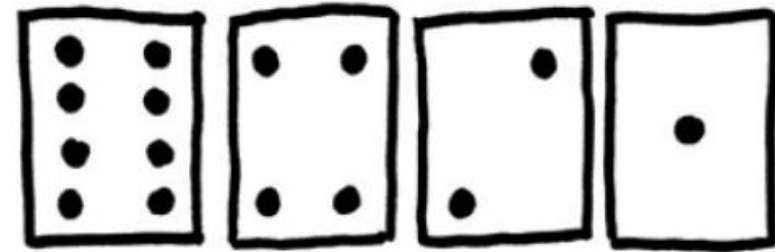


ADI eskola - PK garatzen

Informazioaren irudikapena

Kode bitarra - kontatzen ikasi

- 1etik 15era
- Zer gertatzen da karta bat gehitzen badugu?
- Zein zenbakitaraino kontatu genezake?
- Eta bi gehituz gero?
- Zein zenbakitaraino kontatu ahal izango genuke?



ADI eskola - PK garatzen

Informazioaren irudikapena

Kode bitarra – mezu enkriptatuak

Saiatu asmatzen zein diren zenbakiak. Kodeak kontuan hartuta.

$$\begin{matrix} \boxed{\times} & \boxed{\checkmark} & \boxed{\times} & \boxed{\times} & \boxed{\checkmark} \\ (\checkmark=1, \times=0) \end{matrix} =$$

$$\begin{matrix} \uparrow & \downarrow & \uparrow \\ (\uparrow=1, \downarrow=0) \end{matrix} =$$

$$\begin{matrix} \bigcirc & \bigcirc & \bigcirc & \bigcirc & \bigcirc \\ (\odot=1, \circ=0) \end{matrix} =$$

$$\begin{matrix} \text{☰} & \text{☷} \\ (\text{☰}=1, \text{☷}=0) \end{matrix} =$$

$$\begin{matrix} \text{☺} & \text{☹} \\ (\text{☺}=1, \text{☹}=0) \end{matrix} =$$

$$\begin{matrix} \text{👍} & \text{👎} & \text{👍} & \text{👎} \\ (\text{👍}=1, \text{👎}=0) \end{matrix} =$$

$$\begin{matrix} + & + & \times & + \\ (+=1, \times=0) \end{matrix} =$$

$$\begin{matrix} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ (\curvearrowright=1, \curvearrowleft=0) \end{matrix} =$$

$$\begin{matrix} \blacktriangle & \blacktriangledown & \blacktriangle & \blacktriangledown & \blacktriangledown \\ (\blacktriangle=1, \blacktriangledown=0) \end{matrix} =$$

$$\begin{matrix} \spadesuit & \spadesuit & \spadesuit & \spadesuit & \spadesuit \\ (\spadesuit=1, \clubsuit=0) \end{matrix} =$$

ADI eskola - PK garatzen

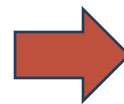
Informazioaren irudikapena

Kode bitarra – mezu enkriptatuak

1	2	3	4	5	6	7	8	9	10	11	12	13	14	
a	b	c	ch	d	e	f	g	h	i	j	k	l	ll	
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
m	n	ñ	o	p	q	r	s	t	u	v	w	x	y	z

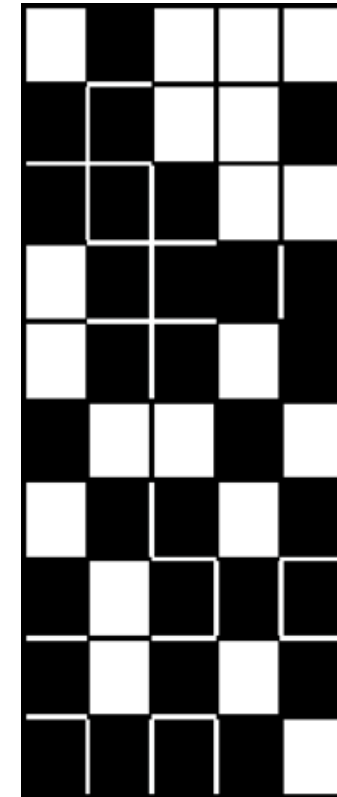
- 2 Ikasle bakoitzak mezu enkriptatu bat diseinatuko du eta ikaskidearekin trukatu du ebatzi dezan

TREBATU ZAITEZ

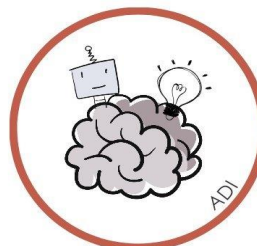


[Binary Game](#)

1



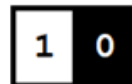
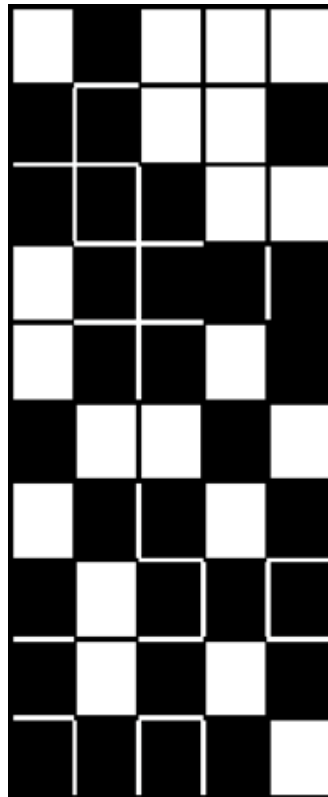
1 0



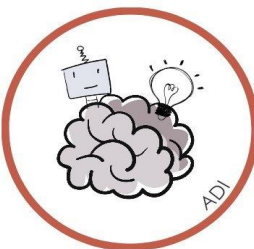
ADI eskola - PK garatzen

Informazioaren irudikapena

Kode bitarra – mezu enkriptatuak



10111	23	t
00110	6	e
00011	3	c
10000	16	n
10010	18	o
01101	13	l
10010	18	o
01000	8	g
01010	10	i
00001	1	a

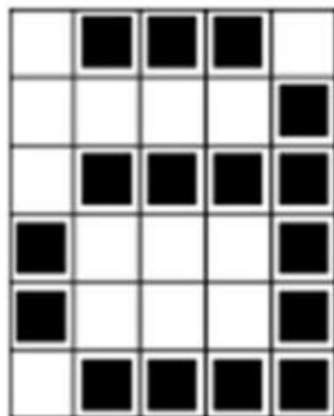


ADI eskola - PK garatzen

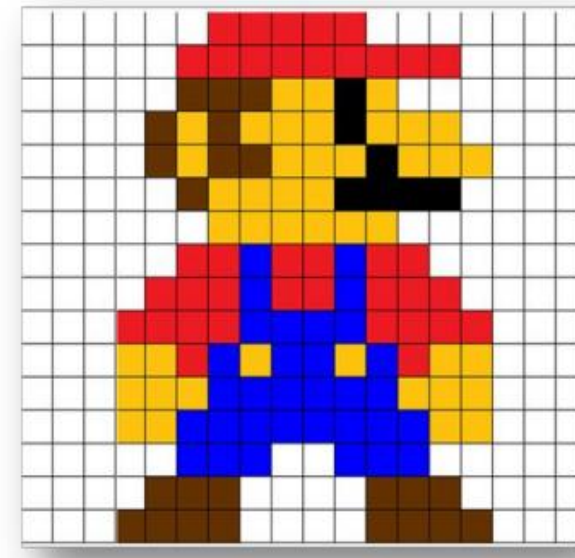
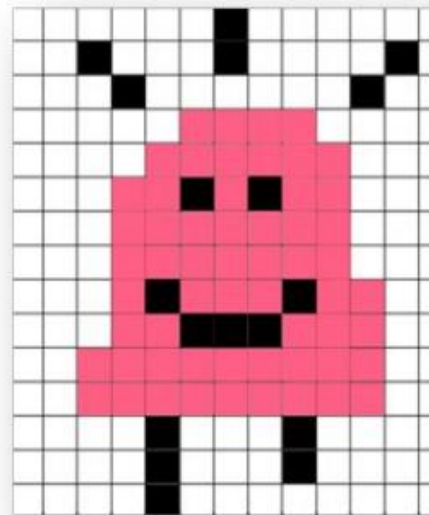
Informazioaren irudikapena

Irudiak- pixela

Pixel bat irudi digital baten parte den koloretako unitate homogeneo txikiena da



1, 3, 1
4, 1
1, 4
0, 1, 3, 1
0, 1, 3, 1
1, 4

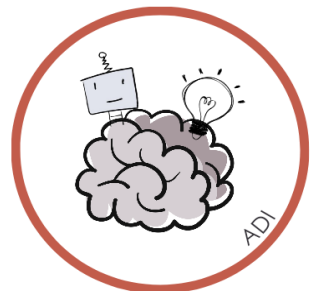


ADI eskola - PK garatzen

Informazioaren irudikapena

Irudiak- pixela

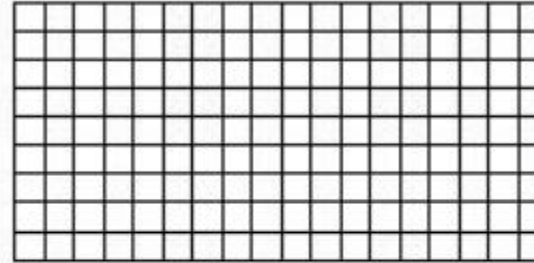
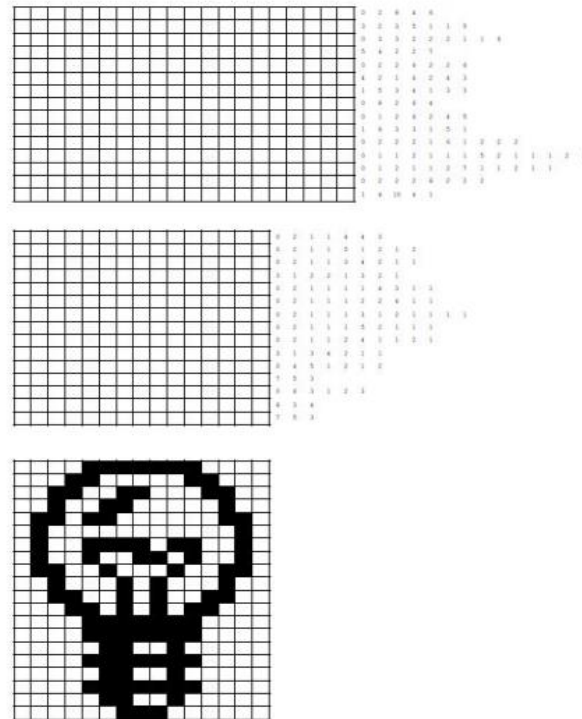
							2,3,2
							1,5,1
							1,1,1,1,1,1,1
							1,5,1
							1,5,1
							0,7
							1,1,1,1,1,1,1



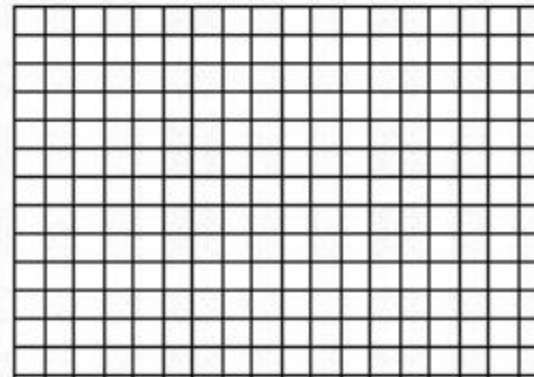
ADI eskola - PK garatzen

Informazioaren irudikapena

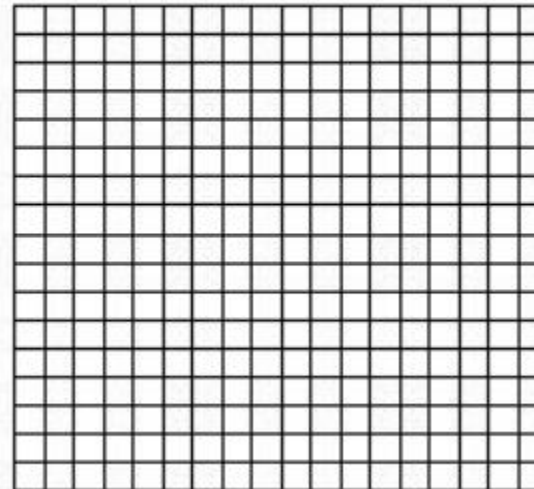
Irudiak- pixela



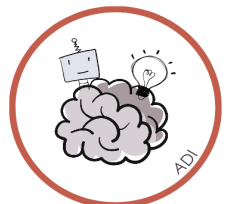
4, 11
 4, 9, 2, 1
 4, 9, 2, 1
 4, 11
 4, 9
 4, 9
 5, 7
 0, 17
 1, 15



6, 5, 2, 3
 4, 2, 5, 2, 3, 1
 3, 1, 9, 1, 2, 1
 3, 1, 9, 1, 1, 1
 2, 1, 11, 1
 2, 1, 10, 2
 2, 1, 9, 1, 1, 1
 2, 1, 8, 1, 2, 1
 2, 1, 7, 1, 3, 1
 1, 1, 1, 1, 4, 2, 3, 1
 0, 1, 2, 1, 2, 2, 5, 1
 0, 1, 3, 2, 5, 2
 1, 3, 2, 5



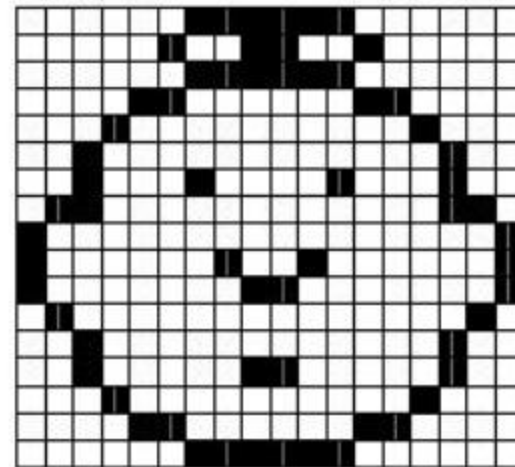
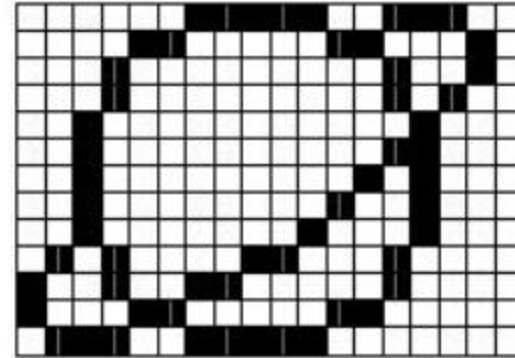
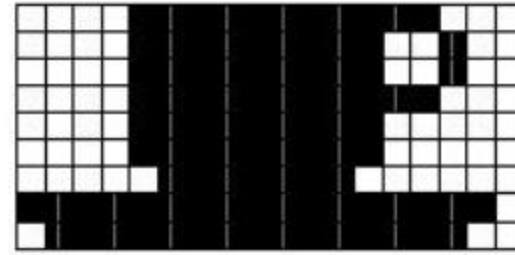
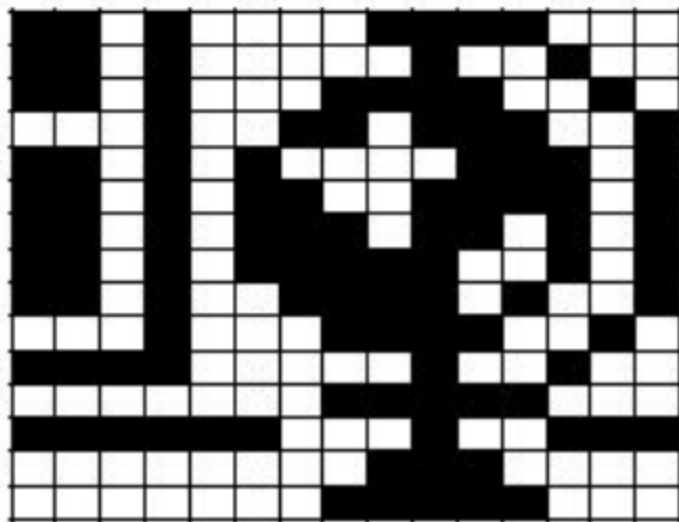
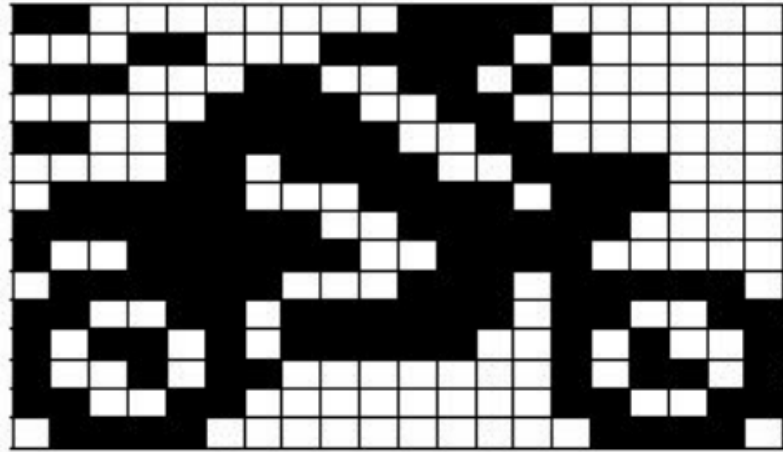
6, 2, 2, 2
 5, 1, 2, 2, 2, 1
 6, 6
 4, 2, 6, 2
 3, 1, 10, 1
 2, 1, 12, 1
 2, 1, 3, 1, 4, 1, 3, 1
 1, 2, 12, 2
 0, 1, 16, 1
 0, 1, 6, 1, 2, 1, 6, 1
 0, 1, 7, 2, 7, 1
 1, 1, 14, 1
 2, 1, 12, 1
 2, 1, 5, 2, 5, 1
 3, 1, 10, 1
 4, 2, 6, 2
 6, 6



ADI eskola - PK garatzen

Informazioaren irudikapena

Irudiak- pixela

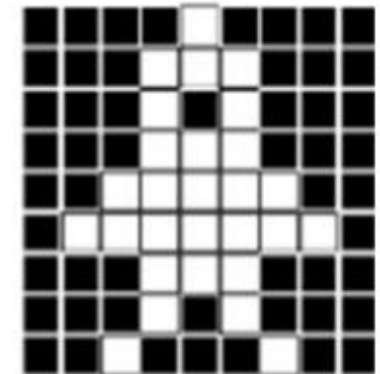
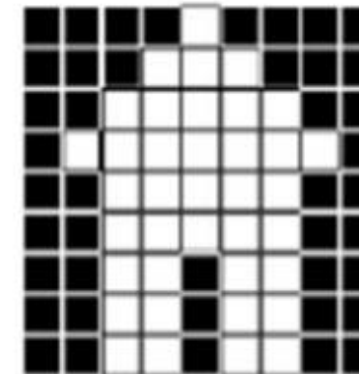
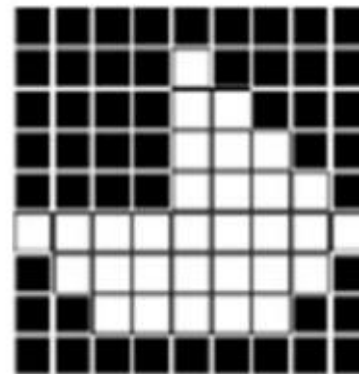
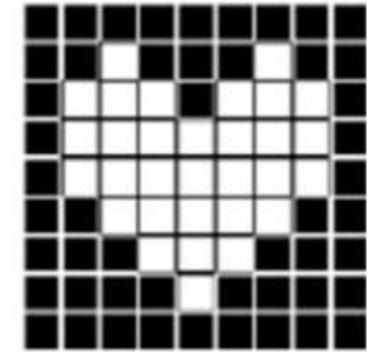
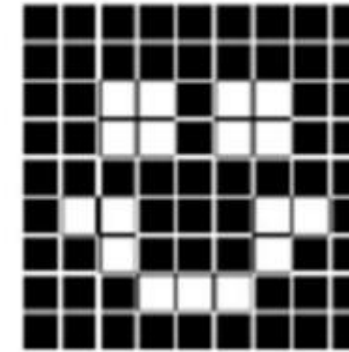
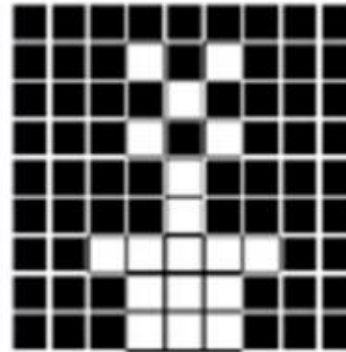


ADI eskola - PK garatzen

Informazioaren irudikapena

Irudiak- pixela

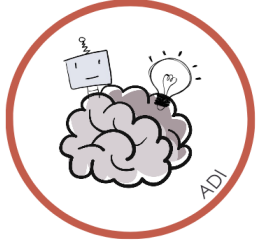
Sortu zure marrazkiaren
pixel sekuentzia, zure
lagunak asmatu dezan.



ADI eskola - PK garatzen

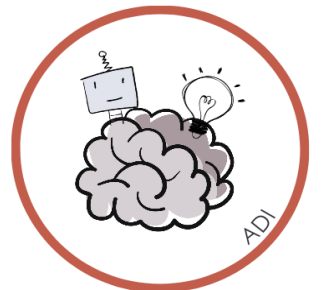
Informazioaren irudikapena

Irudiak- baliabideak



ADI eskola - PK garatzen

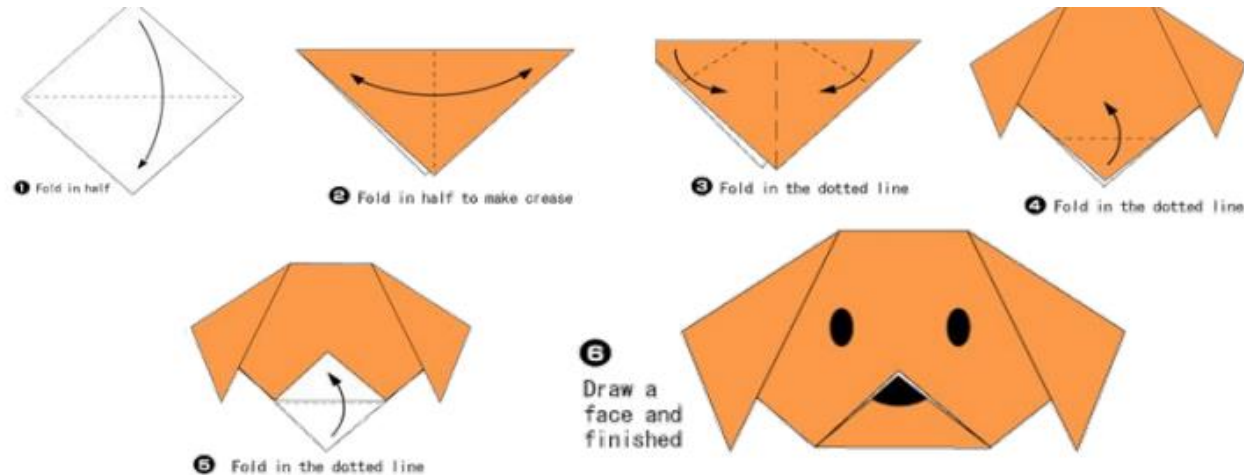
ATSEEDENA 30'



ADI eskola - PK garatzen

Algoritmoak

Algoritmoa arazo bat konpontzeko jarraibideen multzo ordenatu eta finitua da.



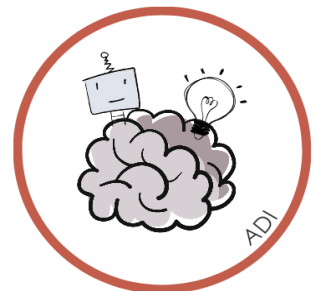
Programa bat ordenagailuak zeregin zehatz bat egiteko exekutatzeko dituen jarraibideen multzoa da

ADI eskola - PK garatzen

Algoritmoak



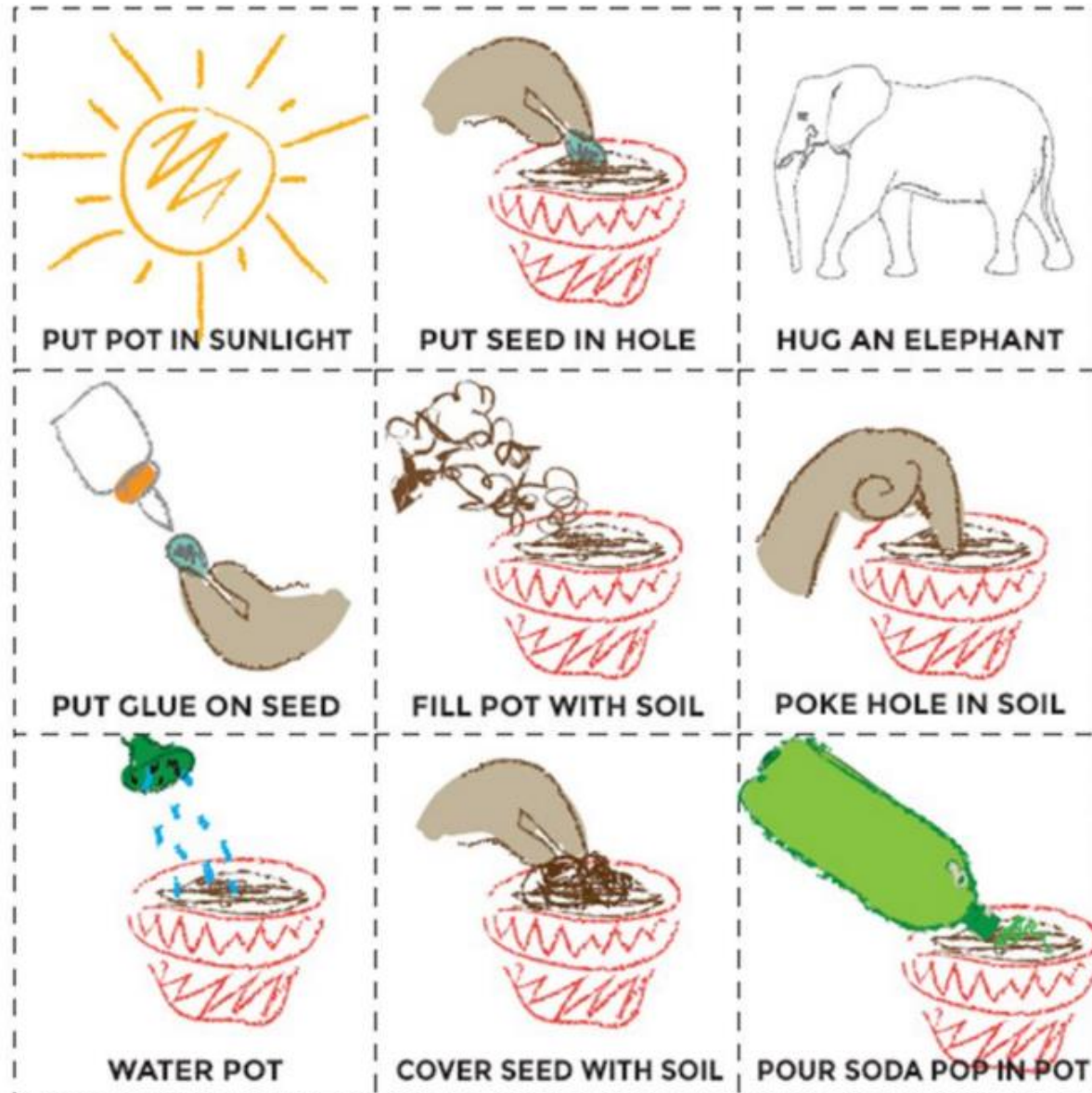
<https://youtu.be/ajkgIMnByFM?si=jyAzlIE4JdNu51qG>



ADI eskola - PK garatzen

Algoritmoak

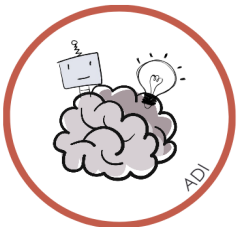
Sortu algoritmo bat beste pertsona bati hazi bat Landatzen laguntzeko.



ADI eskola - PK garatzen

Algoritmoak

Sortu algoritmo bat beste pertsona bati paperezko hegazkin bat egiten laguntzeko.

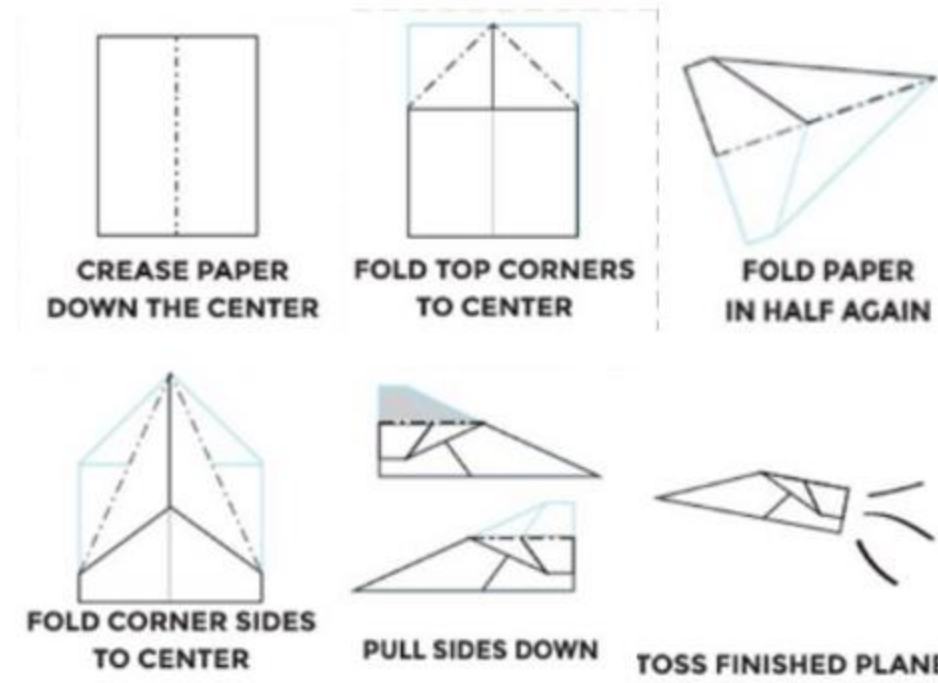


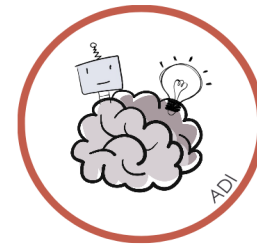
ADI eskola - PK garatzen

Algoritmoak

Sortu algoritmo bat beste pertsona bati paperezko hegazkin bat egiten laguntzeko.

Moztu pausu bakoitza eta sortu algoritmo zuzena





ADI eskola - PK garatzen

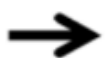
Algoritmoak



Jaso edalontzia



Jaitsi edalontzia



Mugitu edalontziaren zabaleraren erdia aurrerantz



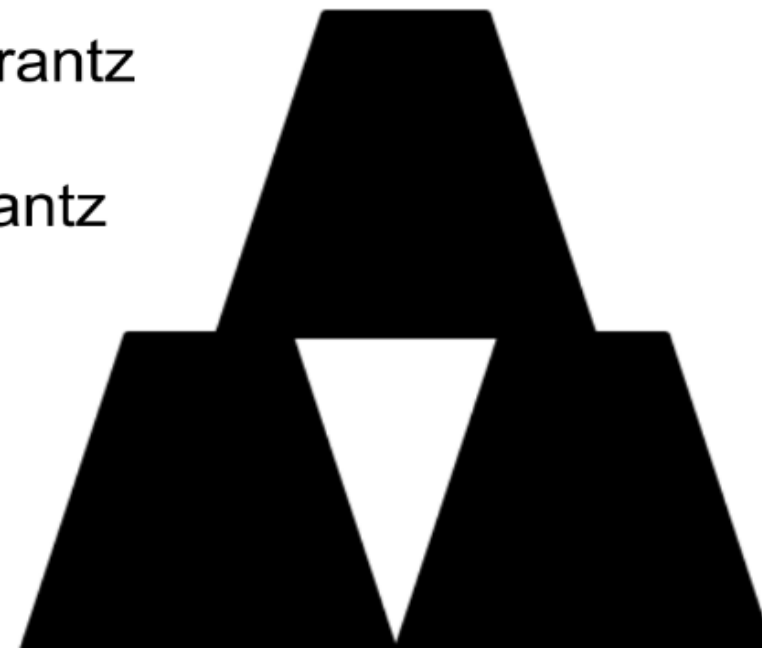
Mugitu edalontziaren zabaleraren erdia atzerantz



Biratu edalontzia 90° eskuinerantz



Biratu edalontzia 90° ezkerrerantz

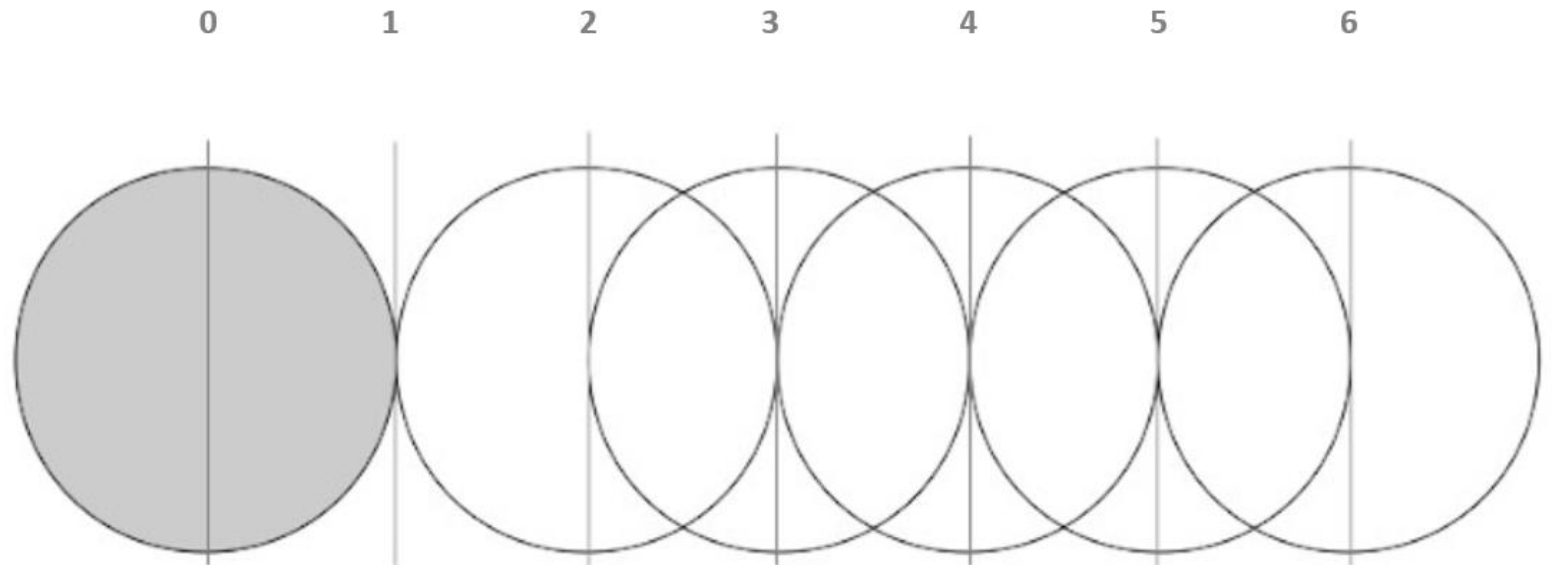


EUSKO JAURLARITZA
GOBIERNO VASCO

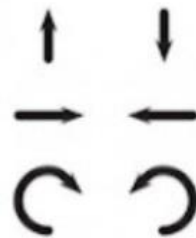
HEZKUNTZA SAILA
DEPARTAMENTO DE EDUCACIÓN

ADI eskola - PK garatzen

Algoritmoak

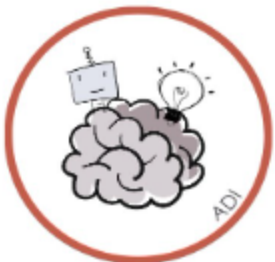
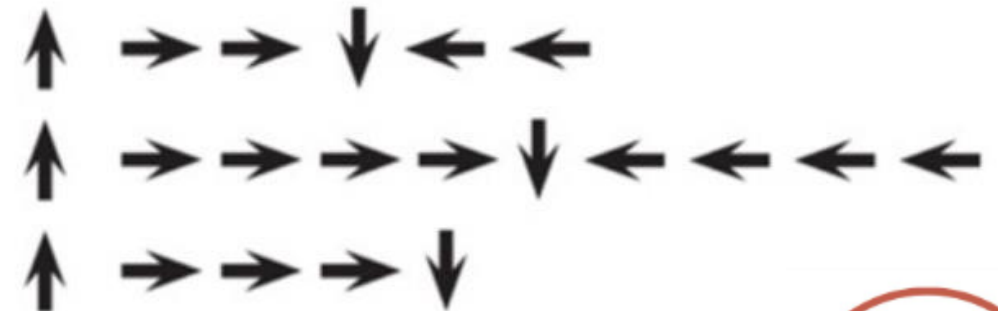
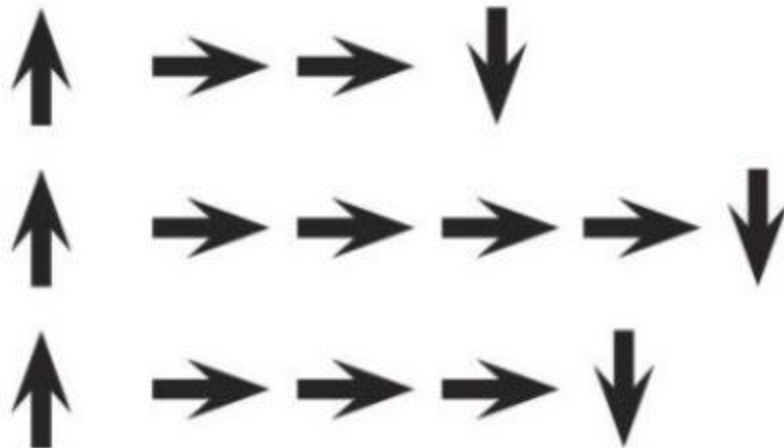
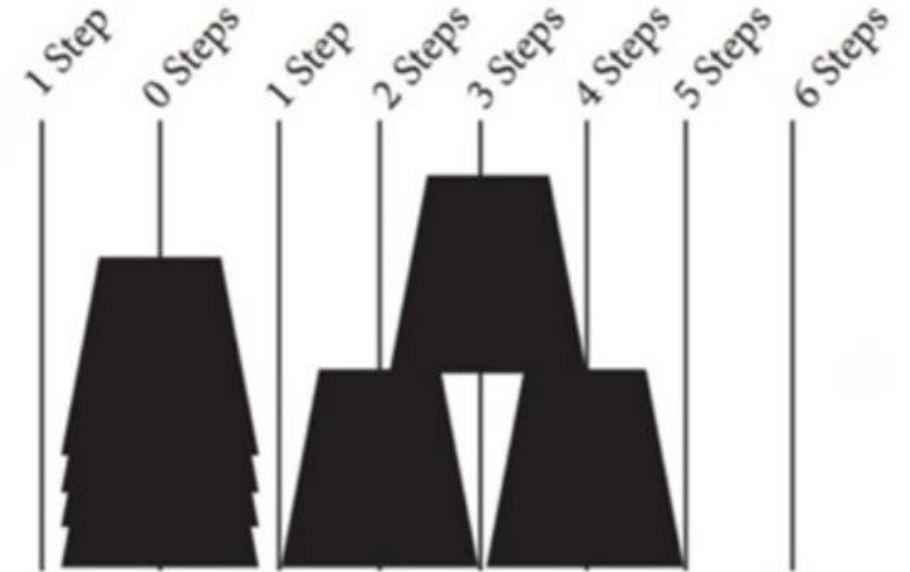
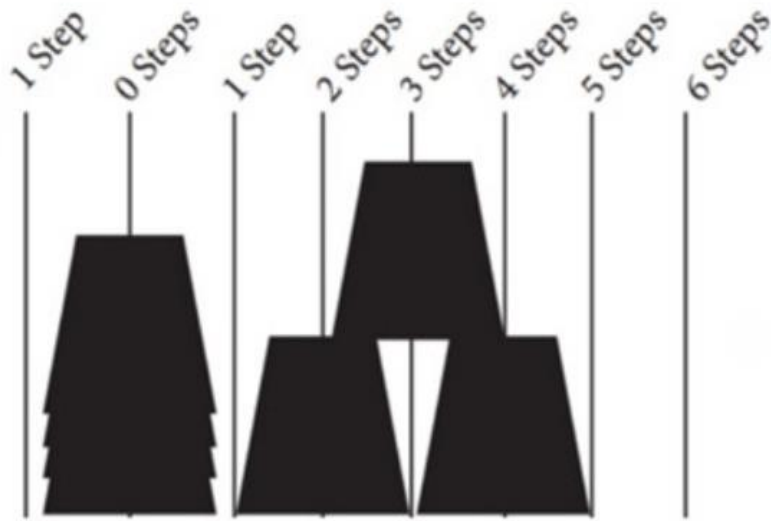


Instrucciones



ADI eskola - PK garatzen

Algoritmoak

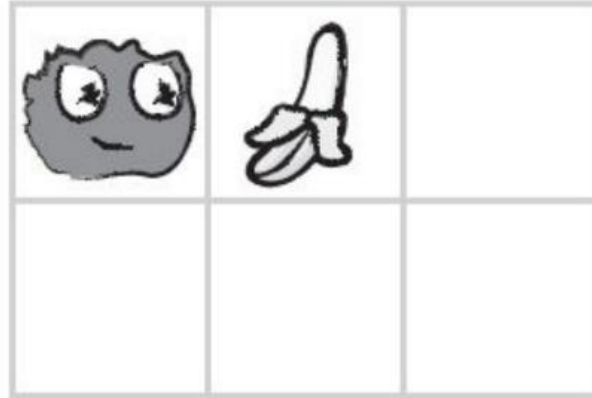


ADI eskola - PK garatzen

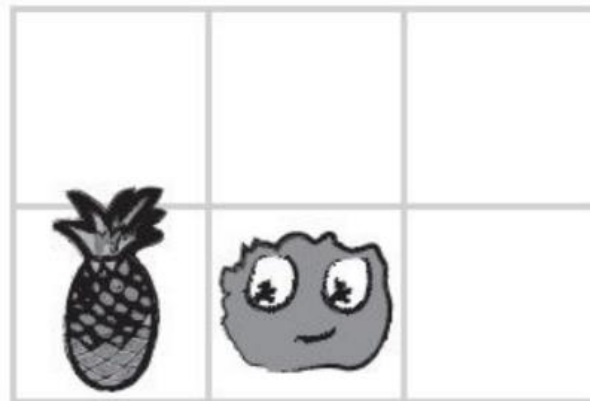
Algoritmoak



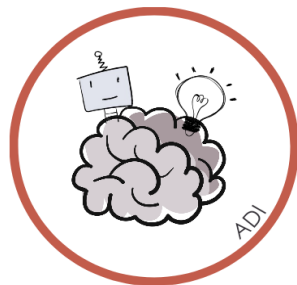
ADI eskola - PK garatzen Programazioa



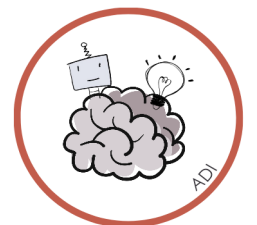
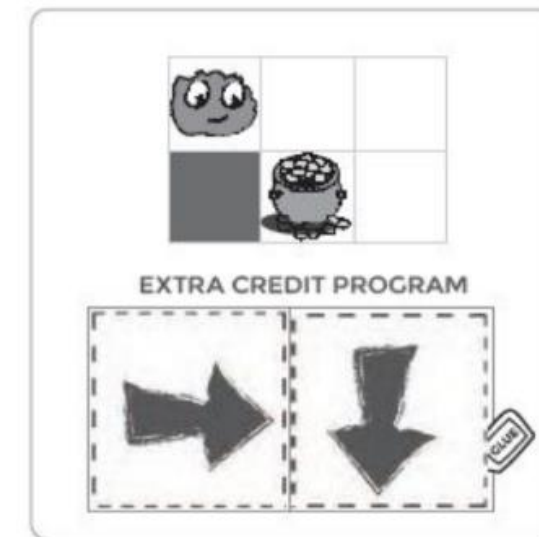
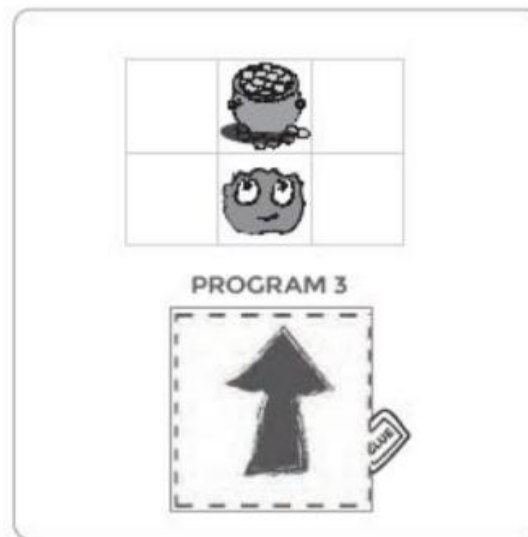
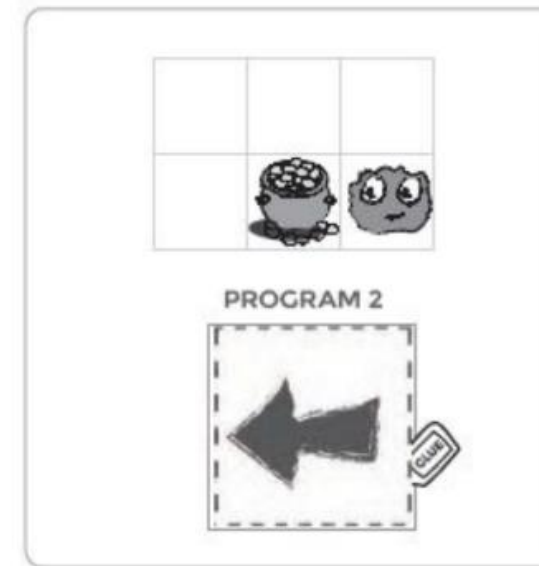
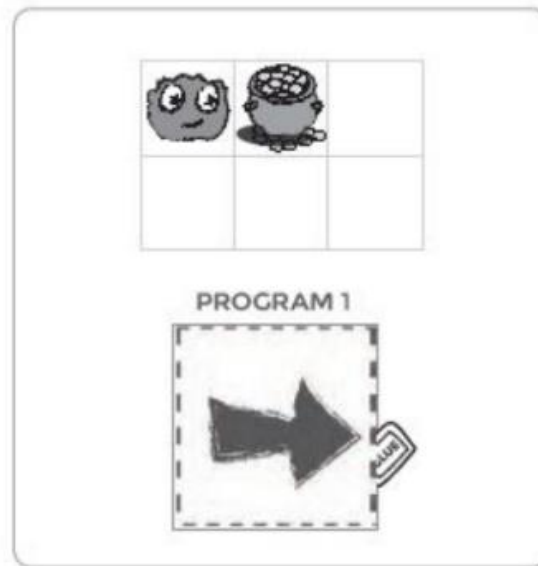
Which way should the Flurb step to get to the fruit?



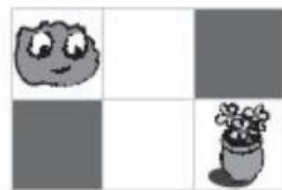
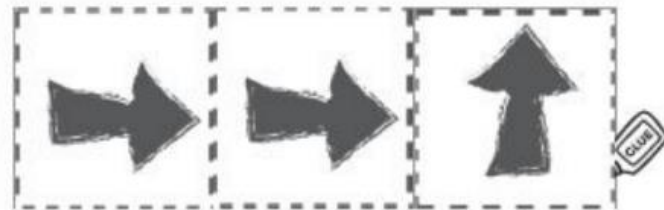
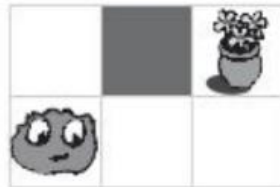
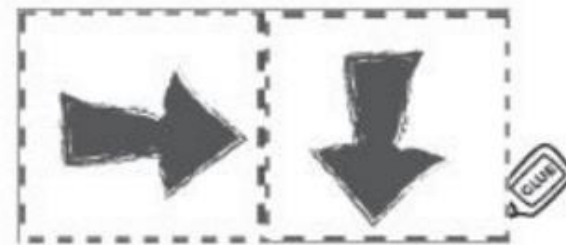
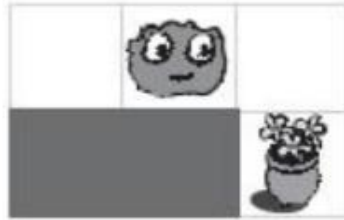
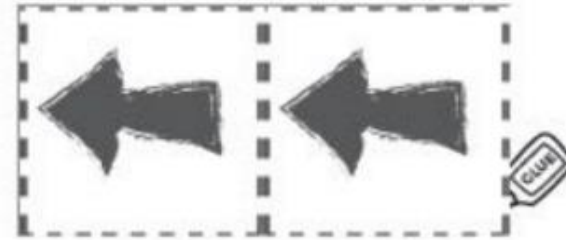
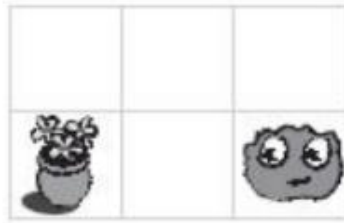
Which way should the Flurb step to get to the fruit?



ADI eskola - PK garatzen Programatzen



ADI eskola - PK garatzen Programatzen



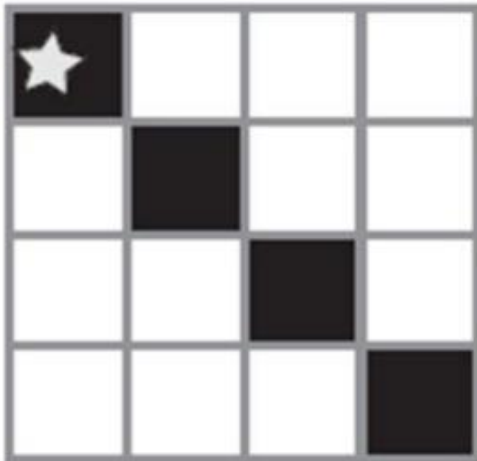
ADI eskola - PK garatzen Programatu



Sekuentzia idazteko, erabili:

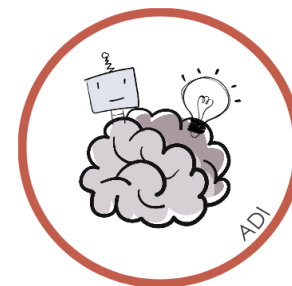
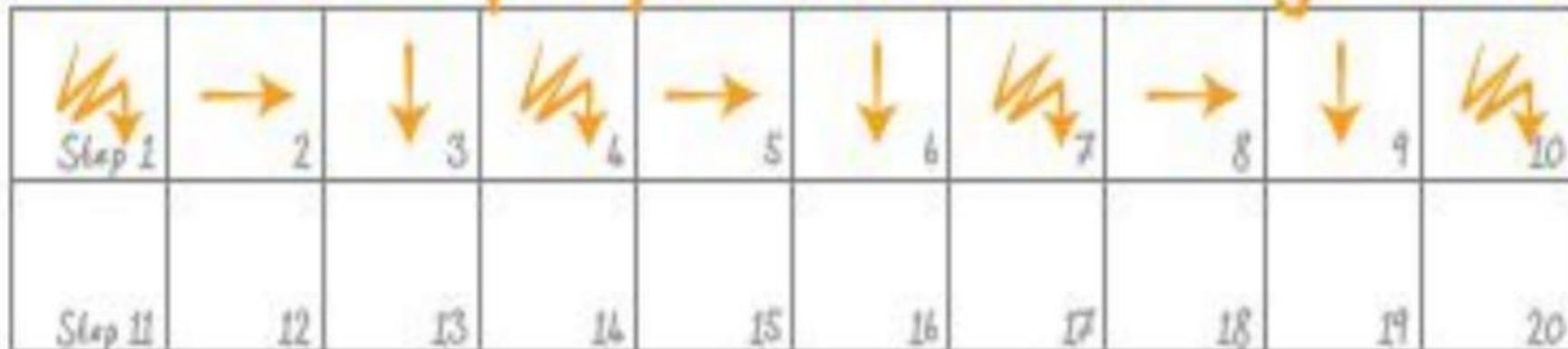
 Move One Square Right
  Move One Square Left
  Move One Square Up
  Move One Square Down
  Fill-In Square with Color

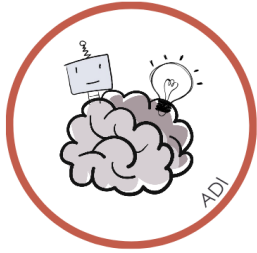
Start Here



Step 1	2	3	4	5	6	7	8	9	10
Step 11	12	13	14	15	16	17	18	19	20

ADI eskola - PK garatzen Programatu





ADI eskola - PK garatzen Programatu

Sekuentzia idazteko, erabili:

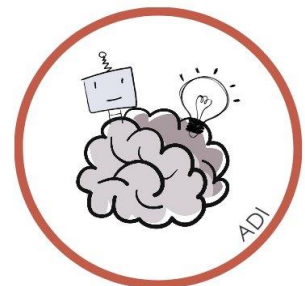
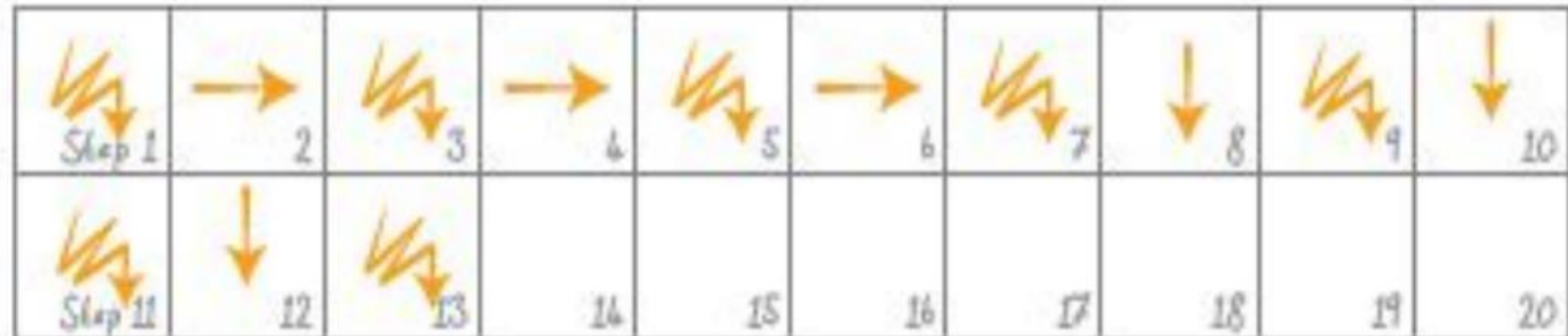
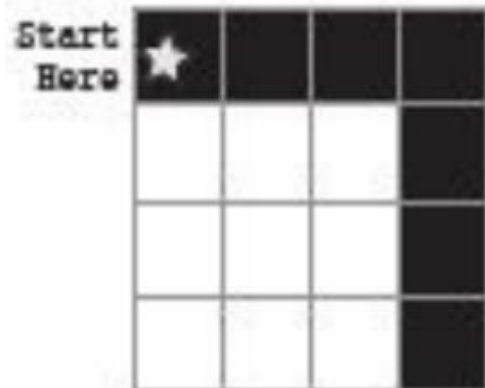
→ Move One Square Right ← Move One Square Left ↑ Move One Square Up ↓ Move One Square Down ↻ Fill-In Square with Color

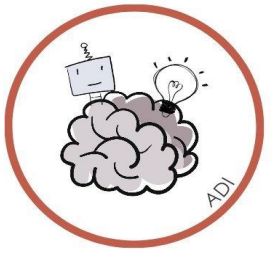
Start Here

★			

Step 1	2	3	4	5	6	7	8	9	10
Step 11	12	13	14	15	16	17	18	19	20

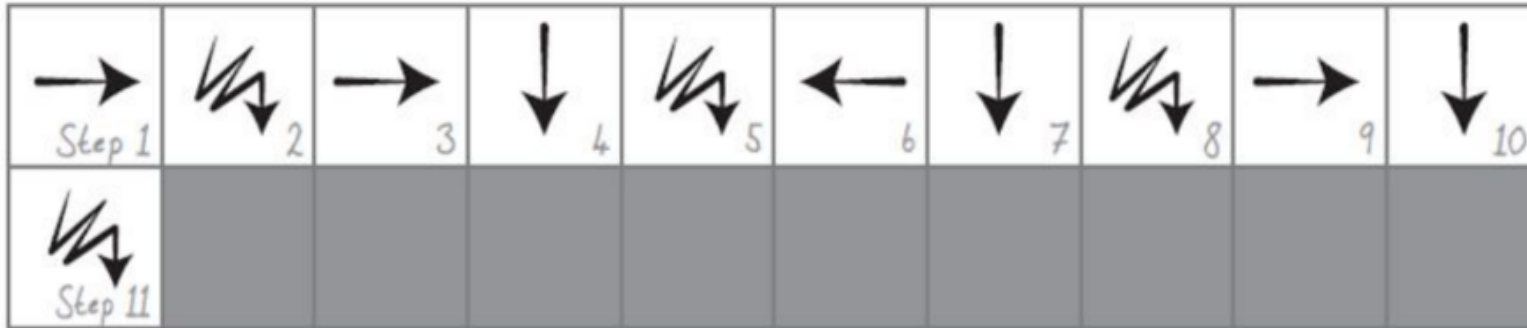
ADI eskola - PK garatzen Programatu





ADI eskola - PK garatzen Programatu

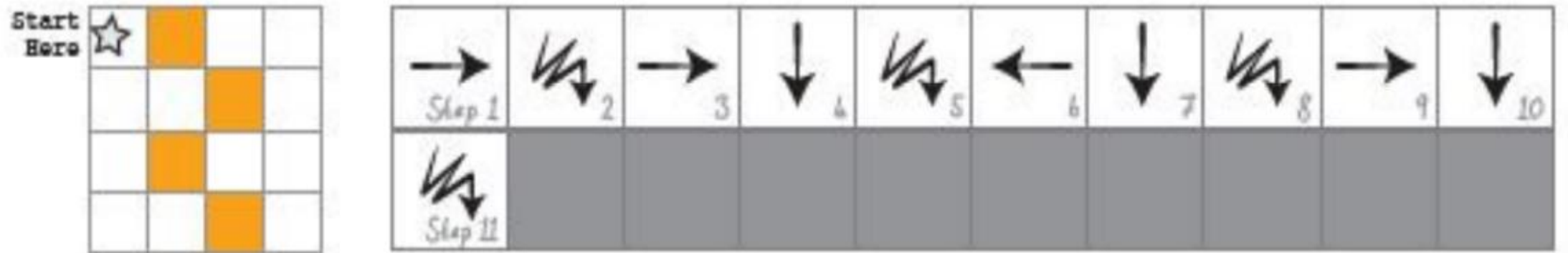
Orain irakurri sekuentzia eta idatzi programa:



★			

ADI eskola - PK garatzen Programatu

Orain irakurri sekuentzia eta idatzi programa:



ADI eskola - PK garatzen Programatu

Lasterketa

→ Move One Square Right ← Move One Square Left ↑ Move One Square Up ↓ Move One Square Down ↻ Fill-In Square with Color

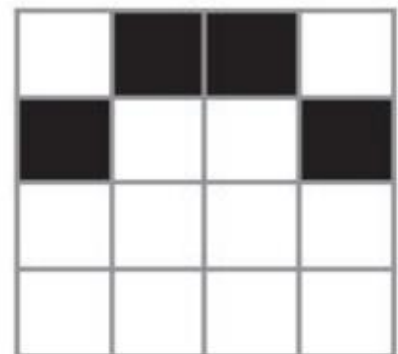


Image 1

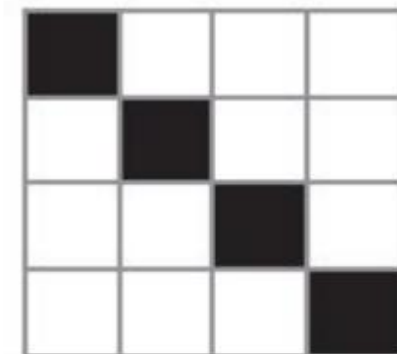


Image 2

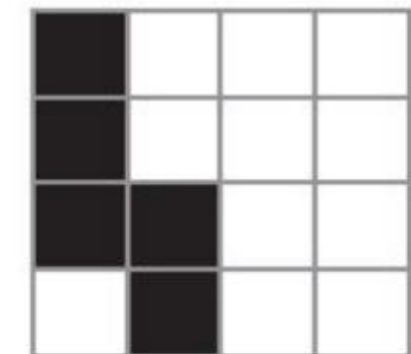


Image 3

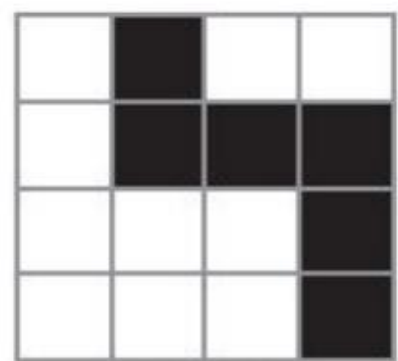


Image 4

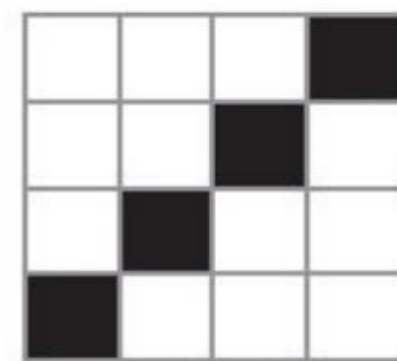


Image 5

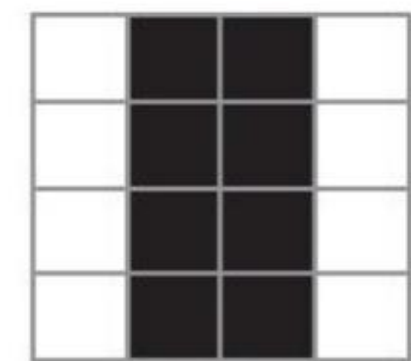
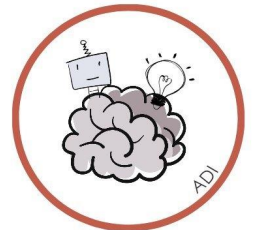
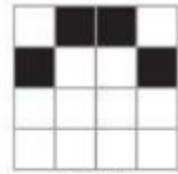


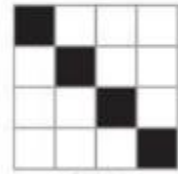
Image 6



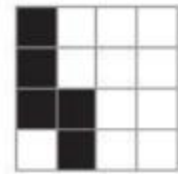
ADI eskola - PK garatzen Programatu



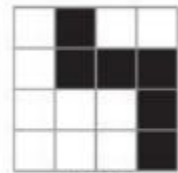
Irudi 1



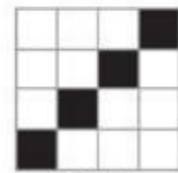
Irudi 2



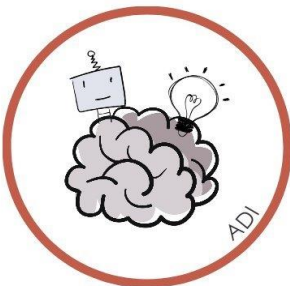
Irudi 3



Irudi 4



Irudi 5



ADI eskola - PK garatzen

Debbug



La matemática Grace Hopper desarrolló el primer compilador y el lenguaje de programación COBOL. Popularizó la historia del primer bug informático "real".

Alan started
 stopped - alan ✓
 13⁰⁰ (032) MP - MC { 1.2700 9.037 847 02
 (033) PRO 2 2.130476415 9.037 846 895
 convd 2.130676415
 Relays 6-2 in 033 failed special speed test
 in relay .. 11,000 test.
 Relays changed
 Started Cosine Tape (Sine check)
 Started Multi Adder Test.
 Relay #70 Panel F
 (moth) in relay.
 First actual case of bug being found.
 Alan started.
 closed down.

CREATED COBOL, THE FIRST COMPLEX COMPUTER LANGUAGE.

COINED THE TERM "DEBUGGING" WHEN A MOTH GOT CAUGHT IN THE COMPUTER.

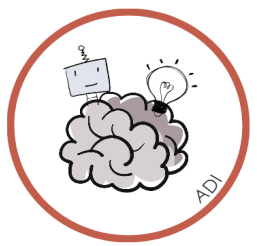
INVENTED THE FIRST COMPILER, FOREVER CHANGING HOW WE USE COMPUTERS.

THE MARK I COMPUTER WAS 51 FEET WIDE.

RECEIVED THE DEFENSE DISTINGUISHED SERVICE MEDAL.

GRACE HOPPER

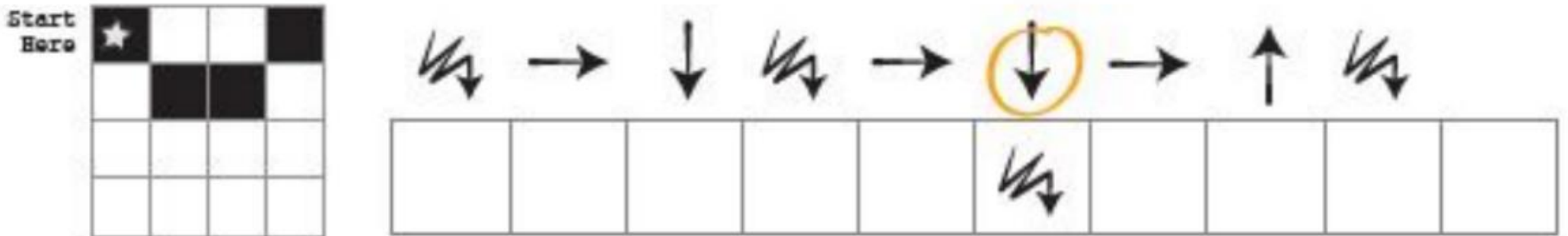
NAVY ADMIRAL AND COMPUTER SCIENTIST



ADI eskola - PK garatzen

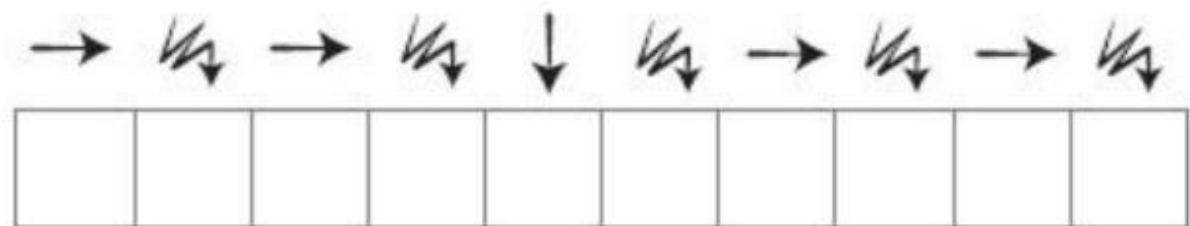
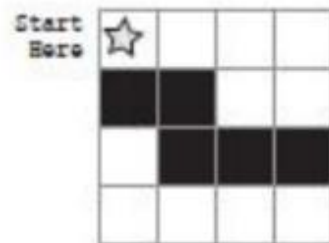
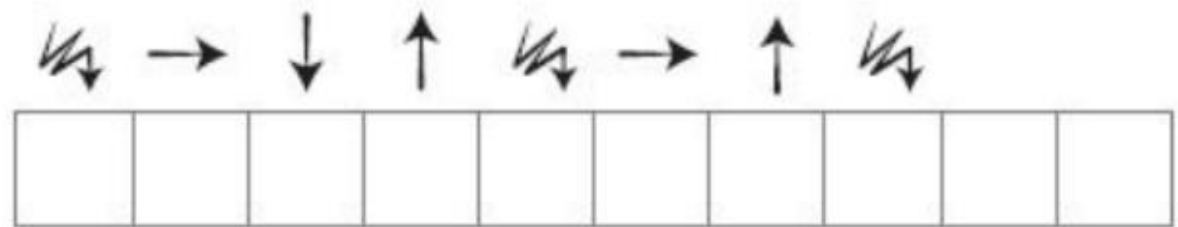
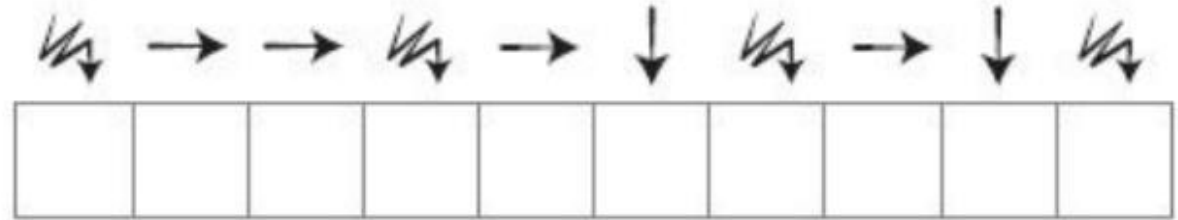
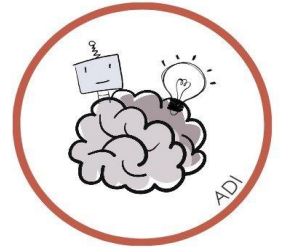
Akatsak hauteman

Zuzendu sekuentzia



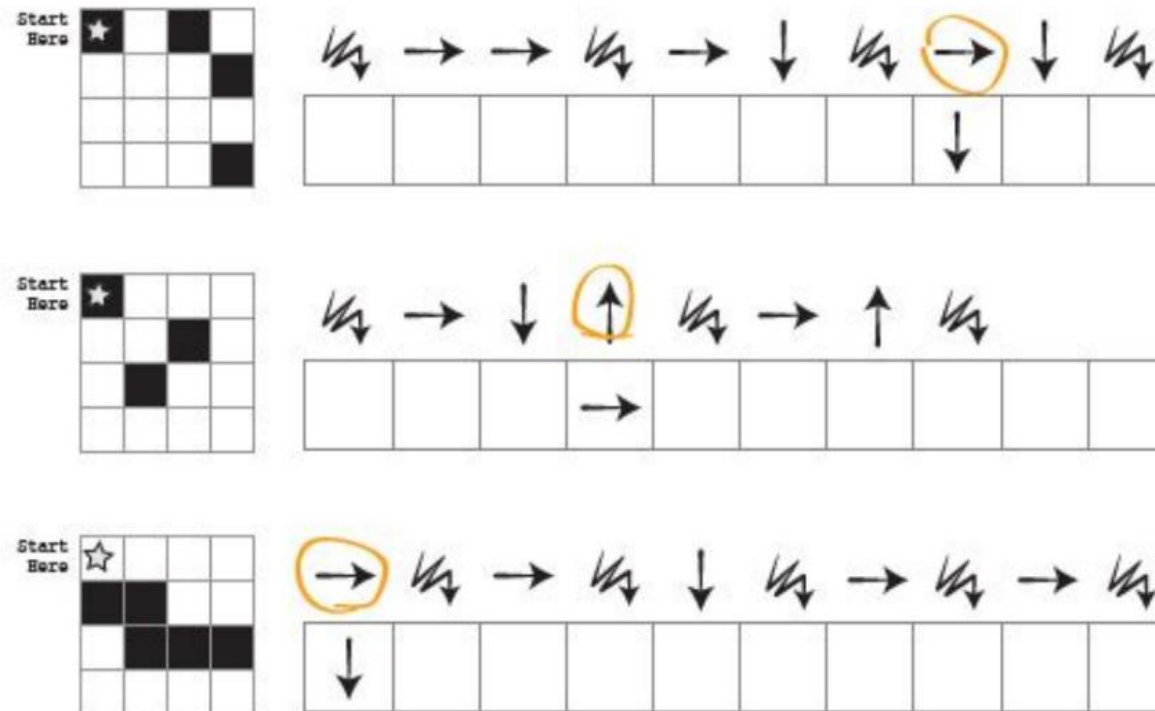
Akatsak hauteman

Zuzendu sekuentzia



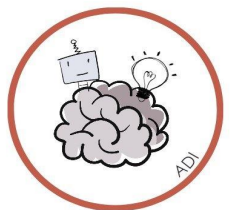
ADI eskola - PK garatzen

Akatsak hauteman



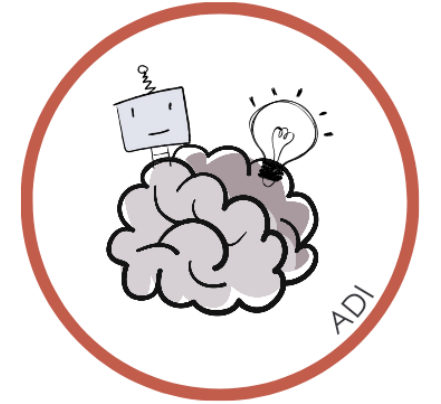
HH / GH adibideak: <https://youtu.be/feqgtNpS7Q8?si=90pYbHMq6gHAQi55>

Beste adibide batzuk : <https://youtu.be/C5SOBAWqLk8?si=WfGTjOnZV-GmjBCm>



ADI eskola

INFORMATIKA DESENTXUFATUA LEGO DUPLO



ADI eskola - PK garatzen

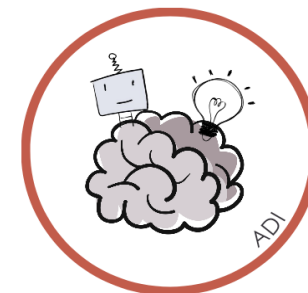
**Gelan erabiltzen duzue LEGO DUPLO?
Nola? Zein mota?**



ADI eskola - PK garatzen

LEGO DUPLO

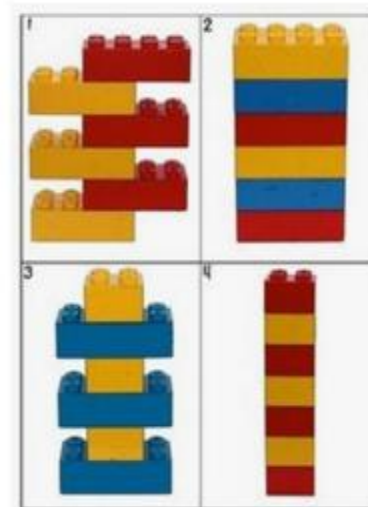
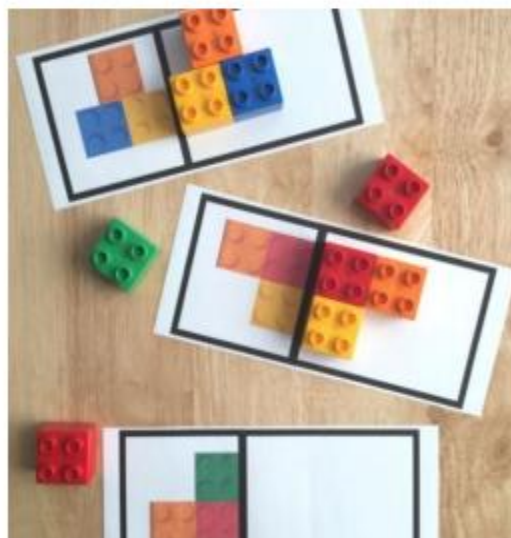
- Haurren jakin-mina eta sormena pizten ditu.
- Nork bere burua adieraztea eta motrizitate fina garatzea sustatzen du.
- Haurrek jolasaren bidez ikasten dute.



ADI eskola - PK garatzen

DUPLOrekin erabil daitezkeen metodologiak

- Patroiak kopiatzea.

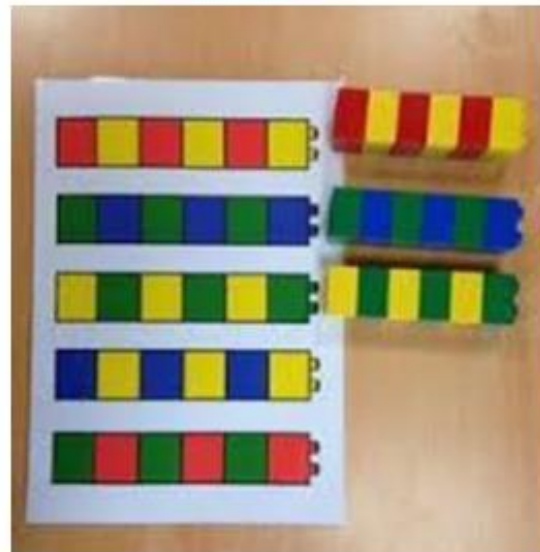


- Piezen ezaugarriak lantzea, hala nola koloreak.
- Simetriak.

ADI eskola - PK garatzen

DUPLOrekin erabil daitezkeen metodologiak

- Serieak kopiatzea.



ADI eskola - PK garatzen

DUPLOrekin erabil daitezkeen metodologiak



- Segidak

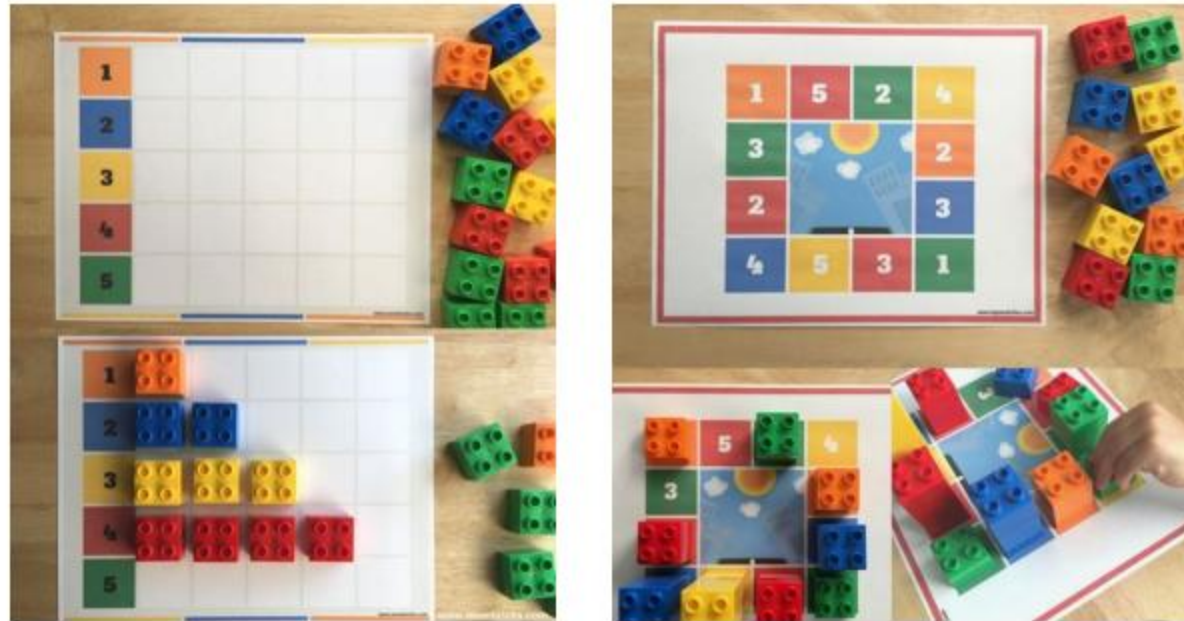
- Kolorearen arabeko sailkapena



ADI eskola - PK garatzen

DUPLOrekin erabil daitezkeen metodologiak

- Piezen bidez zenbakiak eta koloreak lantzea.

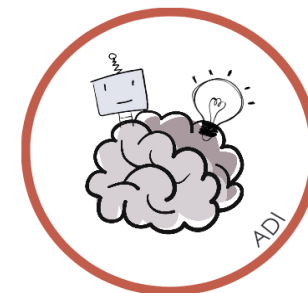


ADI eskola - PK garatzen

- Batuketak eta kenketak lantzea.



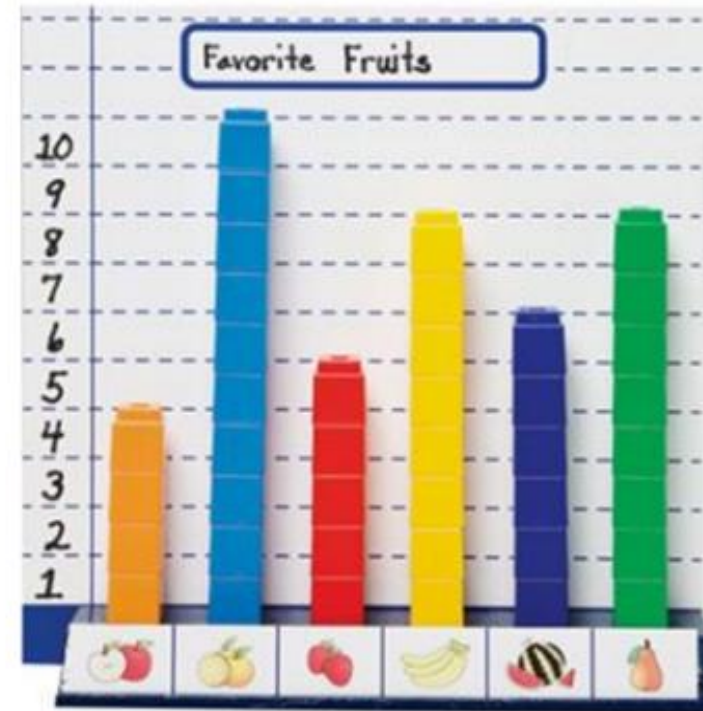
S
U
M
A
S
L
E
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O



ADI eskola - PK garatzen

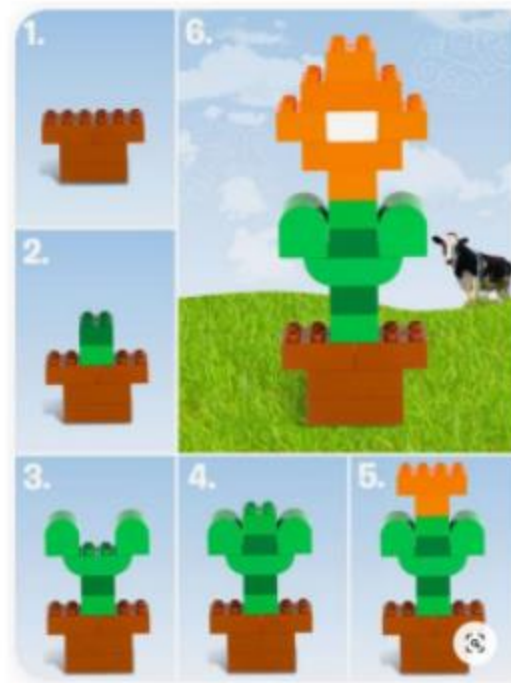
DUPLOrekin erabil daitezkeen metodologiak

- Zenbakiak eta oinarrizko estatistika lantzea.
- Grafikoak ulertzea.



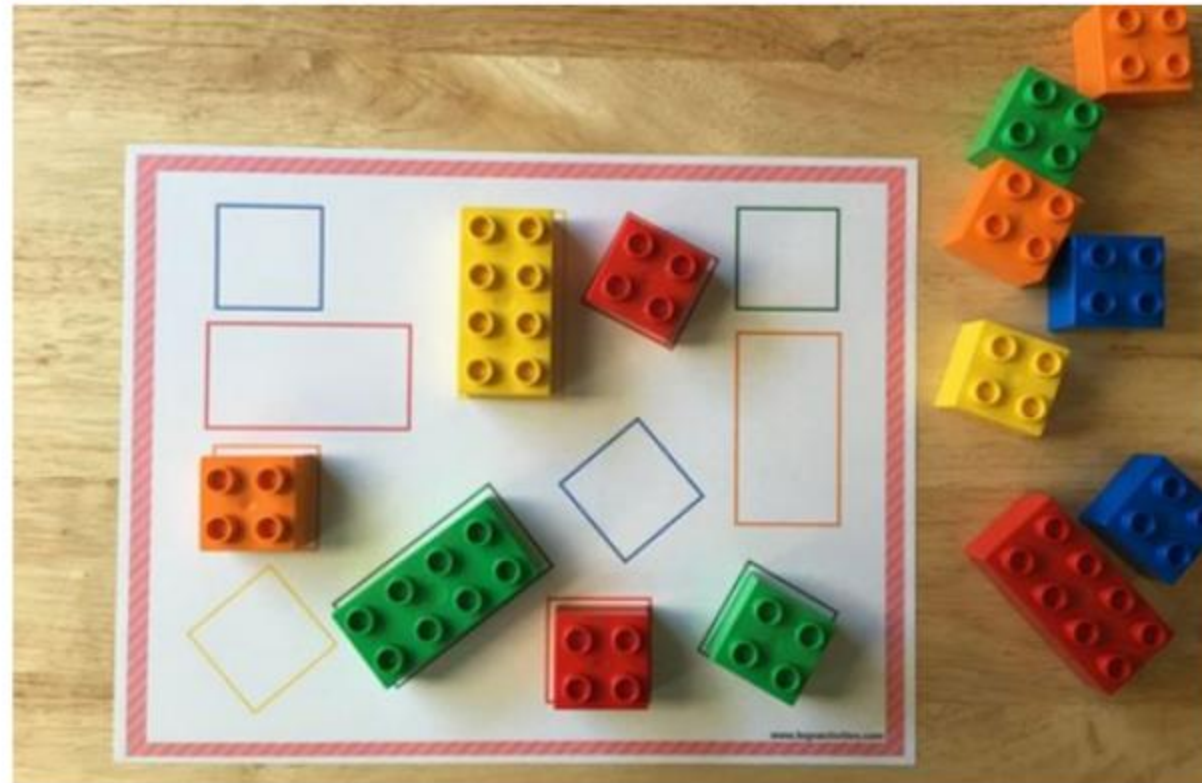
ADI eskola - PK garatzen

- Jarraibideak pausoz pauso errepikatzea.



ADI eskola - PK garatzen

- Forma geometrikoak ikastea.

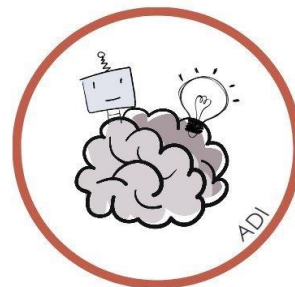


ADI eskola - PK garatzen

ZENBAKIAK



[BIDEO](#)



ADI eskola - PK garatzen

- Irakurketa-idazketa lantzea.



ADI eskola - PK garatzen JOLASAK



LET'S GO CODE



FANTASMA



ZE GEOANIMO



CODEBREAKER



PUZZLEMATCH

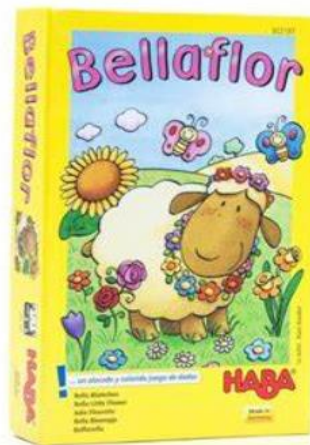
ADI eskola - PK garatzen JOLASAK



BINGO NIMO



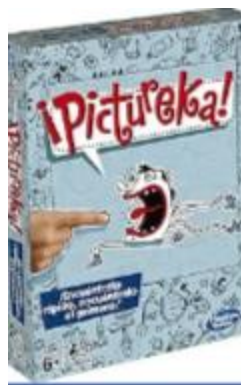
CAMELOT JR



BELLAFLOR



CASTLE LOGIX



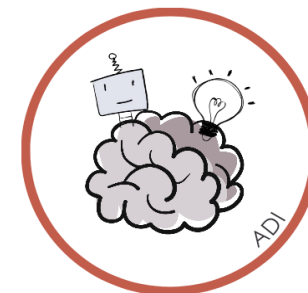
PIKTUREKA



UNICORNIO DESTELLO



LOGIC GAMES



ADI eskola - PK garatzen JOLASAK



DOUBLE



ROBOR MOUSSE



YO APRENDO

Matatalab



MATATALAB

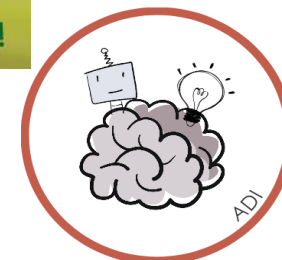
Code & Go



CODE & GO



ROBOT TURTLES



ADI eskola - PK garatzen JOLASAK



COLOUR CODE



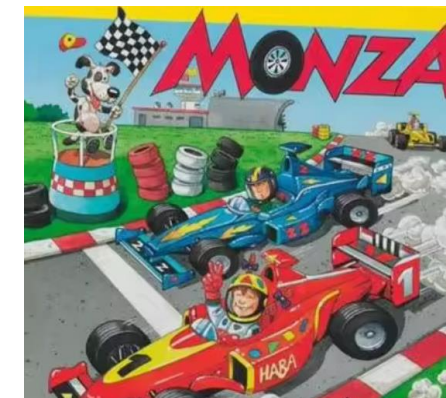
RHINO HERO



IQ FIT



CUBEEZ



MONZA



POLYSSIMO



ALGORACING



RUBIKS RACE

ADI eskola - PK garatzen

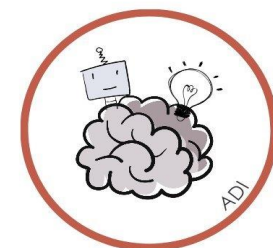
ADIMENGUNEA: [Hasiera - adimengunea](#)

HHko proposamen didaktikoak:

[Proposamen Didaktikoen Bilatzailea - adimengunea](#)
([euskadi.eus](#))

LH-ko desentxufatuak:

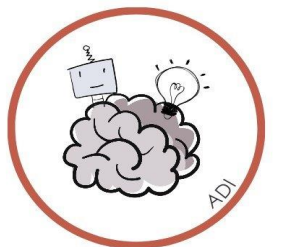
[Proposamen Didaktikoen Bilatzailea - adimengunea](#)
([euskadi.eus](#))



ADI eskola - PK garatzen

KONPROMISOA BETETZEKO TXANTILOIA

EKAINAK 1

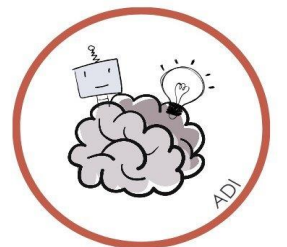


ADI eskola - PK garatzen

EBALUAZIOA

[ADI mintegia HH-LH1](#)

ADI mintegien (HH-LH1) 2.saioa
ebalutzeko galdetegia



ADI eskola - PK garatzen

ERANSKINAK

[HEGAZKINA EGITEKO ALGORITMOA](#)

[EDALONTZIEN ALGORITMOA](#)

[IDATZI KODEA](#)

[KODE BITARRA](#)

[LASTERKETA](#)

[MEZU ENKRIPTATUA](#)

[PIXELEKIN JOLASTEN](#)

[PROGRAMATU 1](#)

[PROGRAMATU 2](#)

[ZUZENDU SEKUENTZIAK](#)

[KODE BITARRA KARTAK](#)

[1 – 2 – 4 – 8 KARTAK](#)

