



10課/Lesson 10/Leksyon 10

ようごとぶん / Words and phrases / Mga Salita

ようご	Words	Mga salita
おはじき	marble; flat marbles; taw	holen
せん	line	linya
ゆび	finger	daliri
はじく	shoot	pitikin
とくてん	point; score	puntos
けっか	results	resulta
ひょう	table; graph	table
まとめる	show; collect; organize	ipapakita
しかた	the way of doing (something)	paraan
ばあい	in the case of...; in the case where	sa kaso ng

ぶん	Phrases	Grupo ng mga salita
おはじきを せんの ところに おいて、 ゆびで はじます。	Place a marble behind the line and shoot/flick it with the finger.	Ilagay ang holan sa linya at pitikin ito upang pumasok sa target.
とくてんの けいさん	calculating points	ang pagkalkula ng mga puntos
けっかを ひょうに まとめました。	We show the results in a table/graph.	Ang resulta ay ipinapakita dito sa table.
けいさんの しかた	how to calculate the points	paraan ng pagkalkula
0この ばあいの とくてん	Points scored in the case of 0 (piece/marble)	Pagkalkula ng puntos sa kaso ng 0 holan.



## 10課/Lesson 10 /Leksyon 10

### 【内容】Contents / Mga Nilalaman

① 0 を掛けると答えは0になる場面を理解し、 $\square \times 0 = 0$ の式で表すことを理解する。
② 0 にどんな数を掛けても答えは0になる場面を理解し、 $0 \times \square = 0$ の式で表すことを理解する。
① To understand in a principle that any number multiplied by zero equals zero, and this is shown in the equation: $\square \times 0 = 0$
② To understand the principle that 0, even if multiplied by any number, remains zero. This is shown in the equation: $0 \times \square = 0$
① Ang pag-unawa sa konseptong kahit ano'ng bilang na i-multiply sa 0, ang sagot ay 0, ito ay ipinapakita sa equation na $\square \times 0 = 0$
② Ang pag-unawa sa konseptong, ang 0 kung i-multiply sa kahit ano mang bilang, ang sagot ay magiging 0 pa rin. Ito ay ipinapakita sa equation, $0 \times \square = 0$ .

### 【日本語の表現】 Math Expressions in Japanese / Mga Math Expressions sa Japanese

① 「おはじき」「はじく」「とくてん」
② N1 のN2のN3 「0点のところの得点」 *Nは名詞の意味
① 「OHAJIKI」[marbles/taw] 「HAJIKU」[shoot/flip] 「TOKUTEN」[score]
② 「N1NO N2NO N3」 「"0" TENNO TOKORONO TOKUTEN」[Scores on the 0 target] *N is noun.
① 「OHAJIKI」[holen] 「HAJIKU」[pitikin] 「TOKUTEN」[iskor]
② 「N1NO N2NO N3」 「"0" TENNO TOKORONO TOKUTEN」 [Nakuhang puntos sa 0 na target] *Ang N ay noun

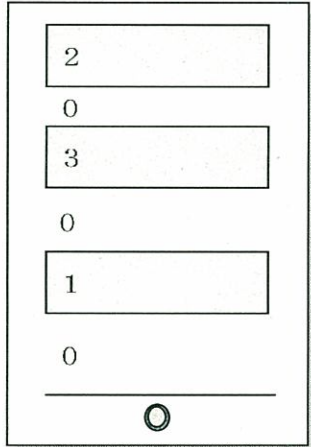
# 10 0のかけざん

ree no kakezan

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導入でよく取り上げられる「陣取りゲーム」の理解

## とくてんゲーム tokuten geemu

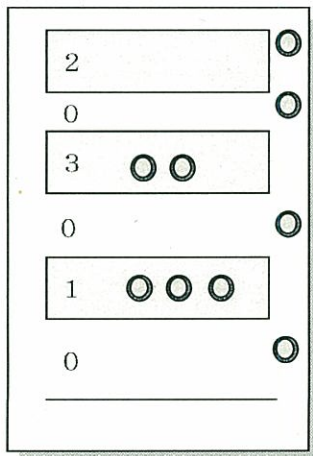


### ゲームのやりかた

- geemu no yarikata
- ① おはじきを せんの ところにおいて、  
Ohajiki o sen no tokoro ni oite,  
ゆびで はじきます。  
yubi de hajikimasu.
- ③ 1の しかくには いったら、1てん。  
Ichi no shikaku ni haittara, itten.  
2の しかくには いったら、2てん。  
Ni no shikaku ni haittara, niten.  
3の しかくには いったら、3てん。  
San no shikaku ni haittara, santen.
- ④ どこにも はいらなかつたら、0てん。  
Dokonimo hairanakattara, reeten.

## ゲームをしたら つぎの ようになりました。

Geemu o shitara tsugi no yooni narimashita.



- ① 3てんの ところにおはじきは  
Santen no tokoro ni ohajiki wa  
なんこ ありますか。
- ② 2てんの ところにおはじきは  
Niten no tokoro ni ohajiki wa  
なんこ ありますか。
- ③ 1てんの ところにおはじきは  
Itten no tokoroni ohajiki wa  
なんこ ありますか。
- ④ 0てんの ところにおはじきは  
Reeten no tokoro ni ohajiki wa  
なんこ ありますか。

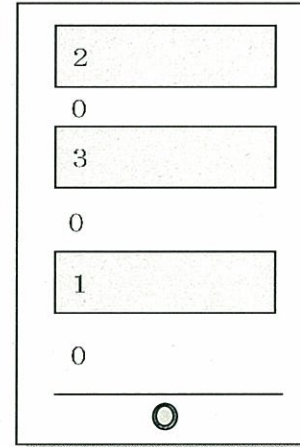
# 10 Multiplying with 0 Multiplying with 0's

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導入でよく取り上げられる「陣取りゲーム」の理解

## Game of gaining Points Paramihan ng Puntos

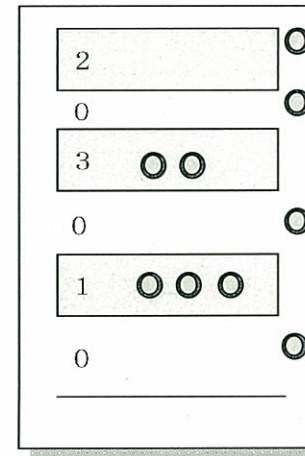
Game Rules:  
Paraan ng Paglaro:



1. Player places a marble behind the starting line, and then shoots the marble towards the target.  
Ilagay ang holen sa linya at pitikin ito upang pumasok sa target.
2. If the marble goes inside the target number 1, the player gets 1 point.  
Pag pumasok sa target number 1, 1 puntos ang makukuha.  
If the marble goes inside the target number 2, the player gets 2 points.  
Pag pumasok sa target number 2, 2 puntos ang makukuha.  
If the marble goes inside the target number 3, the player gets 3 points.  
Pag pumasok sa target number 3, 3 puntos ang makukuha.
3. If the marble lands on the 0-point areas, the player gets 0 point.  
Pag huminto ang holen sa labas ng mga target, walang puntos o sero.

After the game was finished, this is how it goes.

Pagkatapos ng laro, ito ang resulta:



1. How many marbles went inside the 3-point target?  
Ilang holen ang pumasok sa target na mayroong 3 puntos?
2. How many marbles went inside the 2-point target?  
Ilang holen ang pumasok sa target na mayroong 2 puntos?
3. How many marbles went inside the 1-point target?  
Ilang holen ang pumasok sa target na mayroong 1 puntos?
4. How many marbles landed around the 0-point area?  
Ilang holen ang huminto sa 0 puntos na lugar?

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得点の計算方法の理解

## とくてんのけいさん

tokuten no keisan

けっかをひょうにまとめました。

Kekka o hyoo ni matomemashita.

はいったところ haitta tokoro	はいったかず(こ) haitta kazu (ko)	とくてん(てん) tokuten (ten)
3てん santen	2 ni	
2てん niten	0 ree	
1てん itten	3 san	
0てん reeten	4 yon	

## とくてんをけいさんしましょう。

Tokuten o keisanshimashoo.

けいさんのしかた

keisan no shikata

$$\begin{array}{|c|} \hline \text{はいったところのてん} \\ \hline \text{haitta tokoro no ten} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{はいったかず} \\ \hline \text{haitta kazu} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{とくてん} \\ \hline \text{tokuten} \\ \hline \end{array}$$

① 3てんのところ  
santen no tokoro

$$\begin{array}{|c|} \hline 3 \\ \hline \end{array} \times \begin{array}{|c|} \hline \\ \hline \end{array} = \begin{array}{|c|} \hline \\ \hline \end{array}$$

② 1てんのところ  
itten no tokoro

$$\begin{array}{|c|} \hline \\ \hline \end{array} \times \begin{array}{|c|} \hline \\ \hline \end{array} = \begin{array}{|c|} \hline \\ \hline \end{array}$$

Para sa mga Filipino Instructors

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得点の計算方法の理解

## Calculating the scores

Ang pagbilang ng mga puntos

The results are shown in the following table.

Ang resulta ay ipinapakita dito sa table.

Target Target	Number of marbles that went inside the target Bilang ng holen na pumasok sa target	Points received Nakolektang puntos
3 points 3 puntos	2	
2 points 2 puntos	0	
1 point 1 puntos	3	
0 point 0 puntos	4	

Let's add up the points.

Bilangin natin ang mga puntos.

How to calculate the points.

Paraan ng pagkalkula ng mga puntos.

$$\begin{array}{|c|} \hline \text{Target (number of points)} \\ \hline \text{Target (puntos)} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{number of marbles} \\ \hline \text{bilang ng holen} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{points received} \\ \hline \text{nakuhang} \\ \hline \text{puntos} \\ \hline \end{array}$$

① 3-point target  
target (3 puntos)

$$\begin{array}{|c|} \hline 3 \\ \hline \end{array} \times \begin{array}{|c|} \hline \\ \hline \end{array} = \begin{array}{|c|} \hline \\ \hline \end{array}$$

② 1-point target  
target (1 puntos)

$$\begin{array}{|c|} \hline \\ \hline \end{array} \times \begin{array}{|c|} \hline \\ \hline \end{array} = \begin{array}{|c|} \hline \\ \hline \end{array}$$

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## 0のかけざん(1)

ree no kakezan

2てんのところの とくてんは なんてんに なりますか。

Niten no tokoro no tokuten wa nanten ni narimasuka.

はいったところのてん haitta tokoro no ten	×	はいった かず haitta kazu	=	とくてん tokuten
------------------------------------	---	------------------------	---	-----------------

2	×		=	
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はいったかすは  
haitta kazu wa  
0 ですから  
reeko desukara

## 0このばあいの とくてん

reeko no baai no tokuten

2てんのところは niten no tokoro wa	×	0 ですから reeko desukara	=	0 てんです。 reeten desu.
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2	×	0	=	
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これは、  
Korewa,  
「0の ある かけざん」 なのですね。  
ree no aru kakezan nanodesune.

## Multiplying with 0 (1)

Multiplying with 0's (1)

How many points were collected from the 2-point target?

Ilang puntos ang naipon galing sa 2 puntos na target?

Target (number of points) Target (puntos)	×	number of marbles bilang ng holen	=	points received nakuhang puntos
--	---	--------------------------------------	---	------------------------------------

2	×		=	
---	---	--	---	--



since there were no  
marbles inside this target  
dahil walang holen na  
pumasok dito

Calculating the points when there is no marble.

Pagkalkula ng puntos kung walang holen.

2-point target 2 puntos na target	×	0 marbles 0 holen	=	0 points 0 puntos
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2	×	0	=	
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This principle of multiplication is called  
'multiplying with 0'.  
Ito ay tinatawag na 'multiplying with 0'.

## 0のかけざん (2)

ree no kakezan

0てんのところの とくてんは なんてんになりますか。

reeten no tokoro no tokuten wa nanten ni narimasuka.

はいったところのてん haitta tokoro no ten	×	はいった かず haitta kazu	=	とくてん tokuten
------------------------------------	---	------------------------	---	-----------------

0	×		=	
---	---	--	---	--



はいったかすは  
haitta kazu wa  
4こですが  
yonko desuga

## 0てんのところの とくてん

reeten no tokoro no tokuten

0てんのところの とくてんは なんてんになりますか。

reeten no tokoro no tokuten wa nanten ni narimasuka.

0てんのところは reeten no tokoro wa	×	4こですが yonko desuga	=	0てんです。 reeten desu.
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0	×	4	=	
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0てんのところに なんこ はいっても、  
Reeten no tokoro ni nanko haittemo,  
とくてんは 0てん。あたりまえですね。  
tokuten wa reeten. Atarimae desune.  
これも、「0のある かけざん」です。  
Koremo, reeno aru kakezan desu.

## Multiplying with 0 (2)

Multiplying with 0's (2)

How many points were collected from the 0-point areas?

Ilang puntos ang naipon galing sa 0 puntos na mga lugar?

Target (number of points) Target (puntos)	×	number of marbles bilang ng holen	=	points received nakuhang puntos
--	---	--------------------------------------	---	--

0	×		=	
---	---	--	---	--



However, 4 marbles landed  
on the 0-point area  
Ngunit 4 na holen ang  
huminto sa 0 puntos na  
mga lugar

Points collected from the 0-point area

Puntos galing sa 0 puntos na lugar

How many points were collected from the 0-point area?

Ilang puntos ang naipon sa 0 puntos na lugar?

0-point areas 0 puntos na lugar	×	4 marbles 4 na holen	=	0 points 0 puntos
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0	×	4	=	
---	---	---	---	--



As a matter of fact, no matter how many marbles will land at  
the 0 point area, the points collected will always be 0. This is  
an example of the rule of "multiplying with 0".  
Natural lamang na kahit ilang holen man ang mapunta  
sa 0 puntos na lugar, ang puntos na makukuha ay 0 rin.  
Ito ang tinatawag na "the rule of multiplying with 0".