

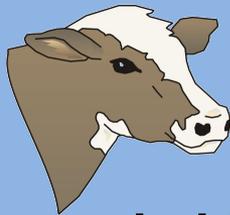
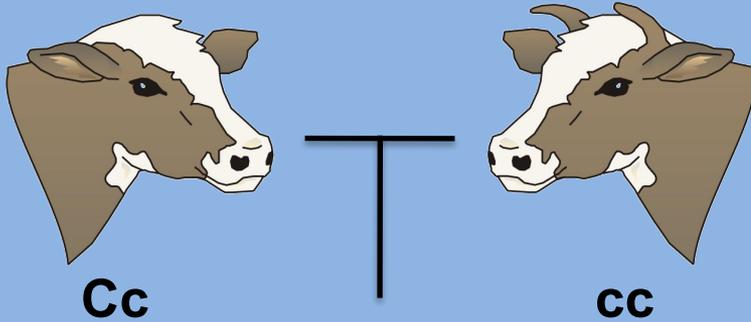
Aula 3:

HERANÇA MENDELIANA II

Herança Mendeliana

PROBABILIDADES

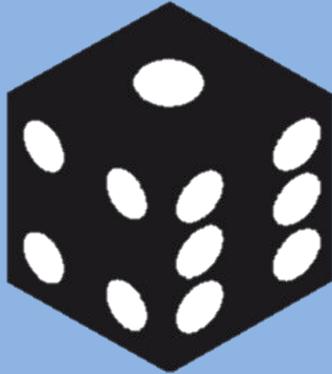
vaca I



Qual a probabilidade
de ter chifres?

Herança Mendeliana

PROBABILIDADES



Herança Mendeliana

PROBABILIDADES

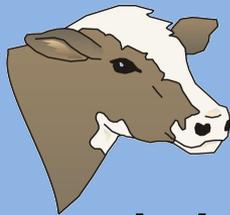
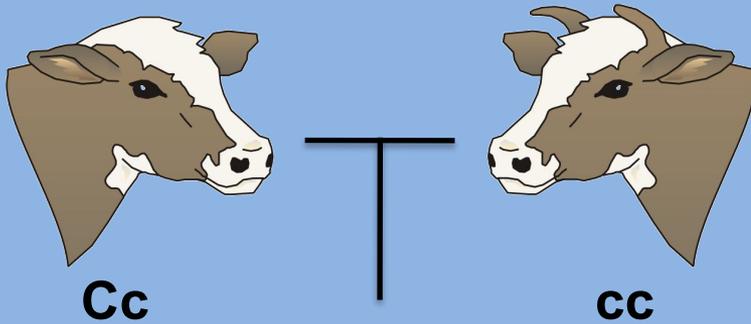


1 de 6 faces
 $P = 1/6$

Herança Mendeliana

PROBABILIDADES

vaca I

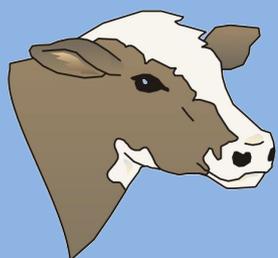


Qual a probabilidade
de ter chifres?

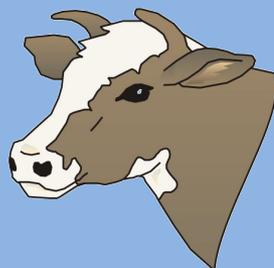
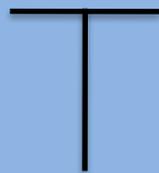
Herança Mendeliana

PROBABILIDADES

vaca I

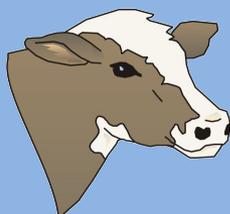


Cc



cc

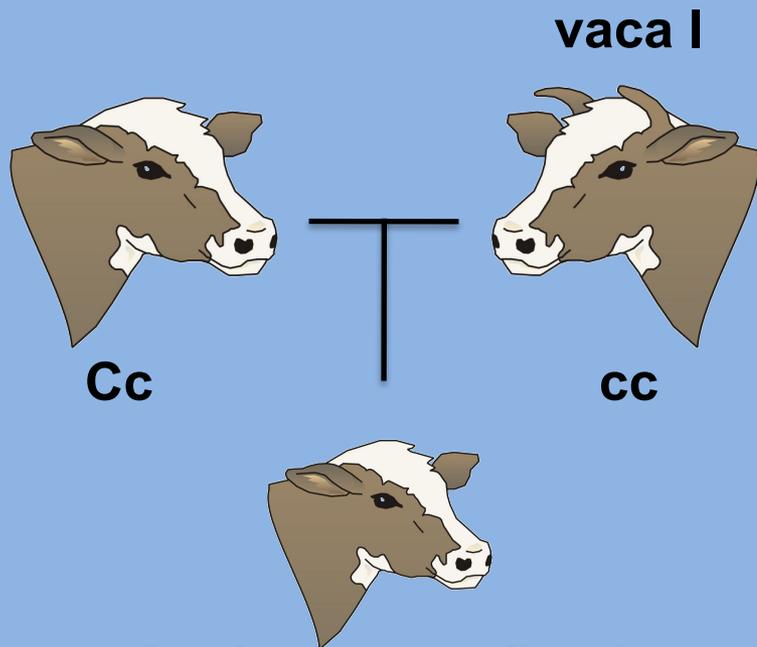
	C	c
c	Cc	cc



Qual a probabilidade de ter chifres?

Herança Mendeliana

PROBABILIDADES



	C	c
c	Cc	cc

1 de 2 combinações

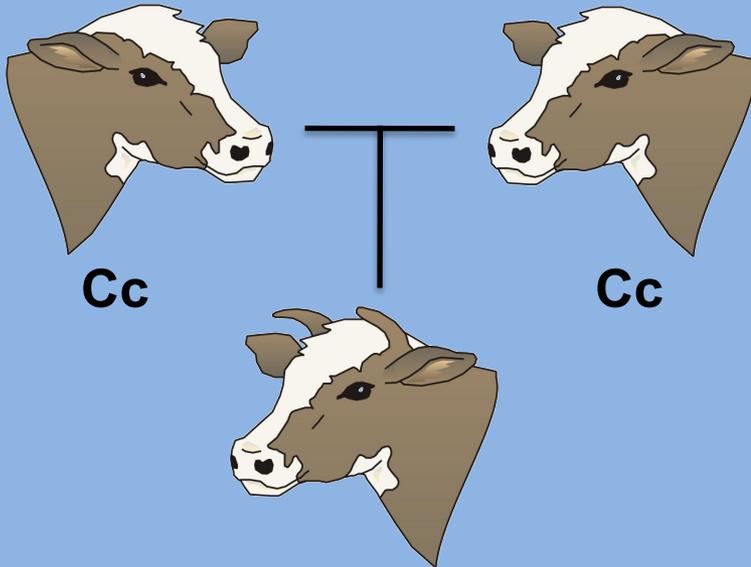
$$P = 1/2$$

Qual a probabilidade de ter chifres?

Herança Mendeliana

PROBABILIDADES

vaca III



Cc

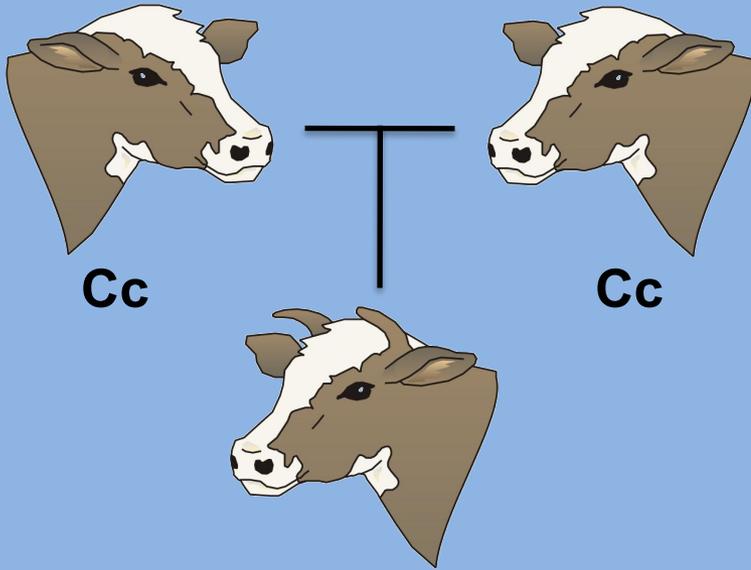
Cc

Qual a probabilidade
de ter chifres?

Herança Mendeliana

PROBABILIDADES

vaca III

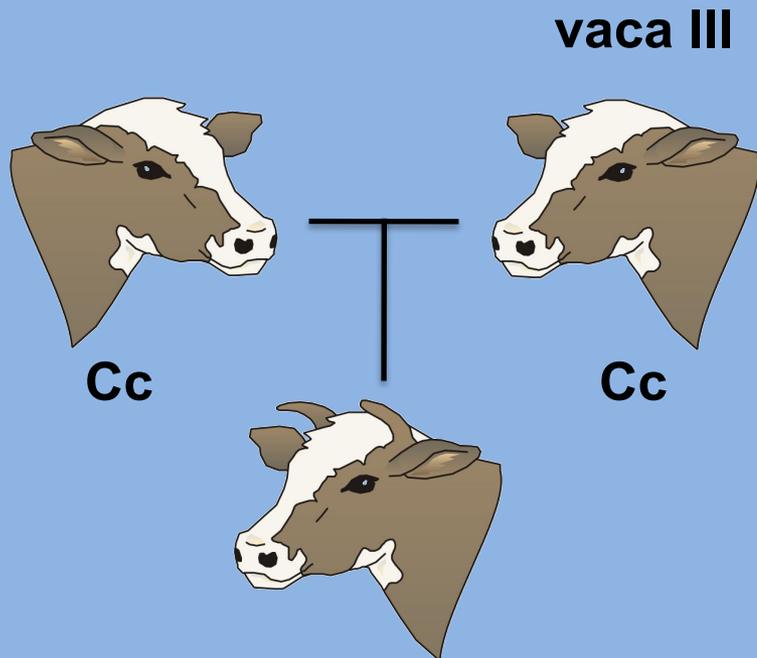


	C	c
C	CC	Cc
c	Cc	cc

Qual a probabilidade de ter chifres?

Herança Mendeliana

PROBABILIDADES



Qual a probabilidade de ter chifres?

	C	c
C	CC	Cc
c	Cc	cc

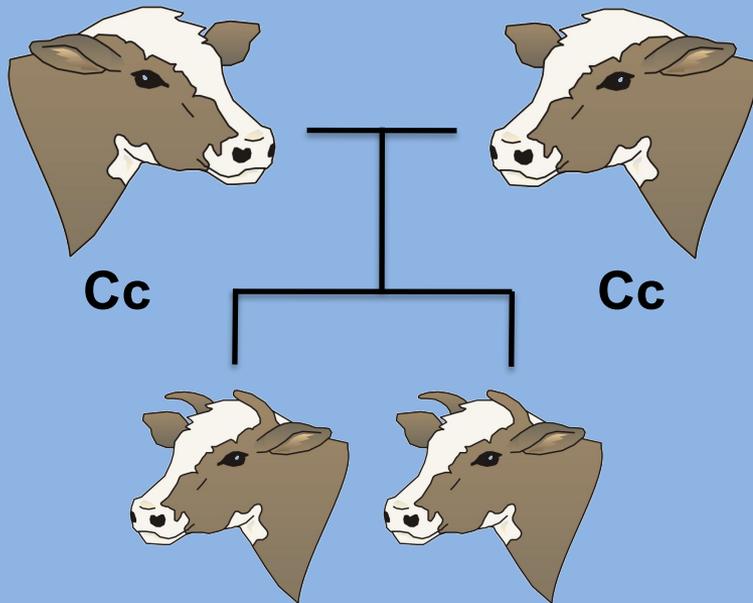
1 de 4 combinações

$$P = 1/4$$

Herança Mendeliana

PROBABILIDADES

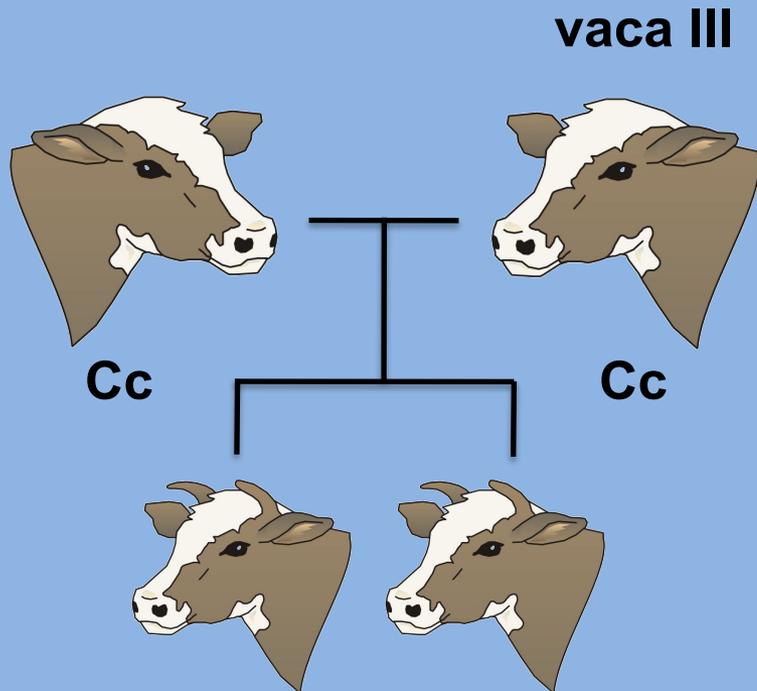
vaca III



Qual a probabilidade
de ter chifres na 2a progênie?

Herança Mendeliana

PROBABILIDADES



	C	c
C	CC	Cc
c	Cc	cc

1 de 4 combinações
 $P = 1/4$

Qual a probabilidade
de ter chifres na 2a progênie?

Herança Mendeliana

PROBABILIDADES

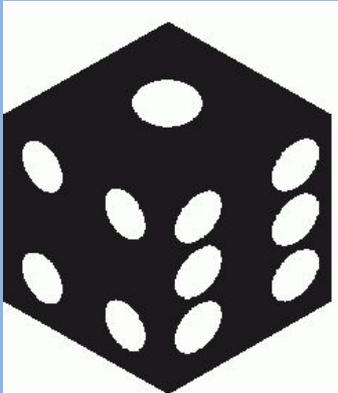


**EVENTOS
INDEPENDENTES**

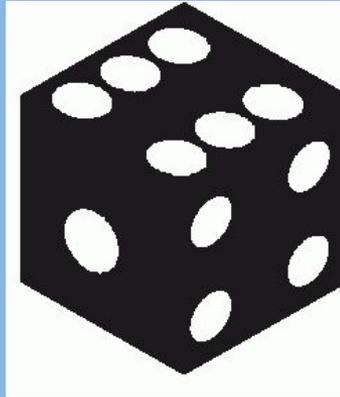
**1 de 6 faces
 $P = 1/6$**

Herança Mendeliana

PROBABILIDADES

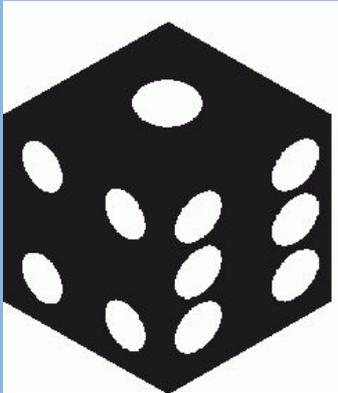


E

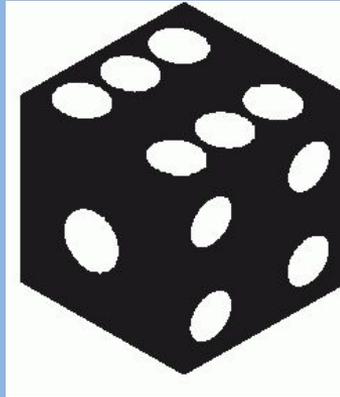


Herança Mendeliana

PROBABILIDADES



E



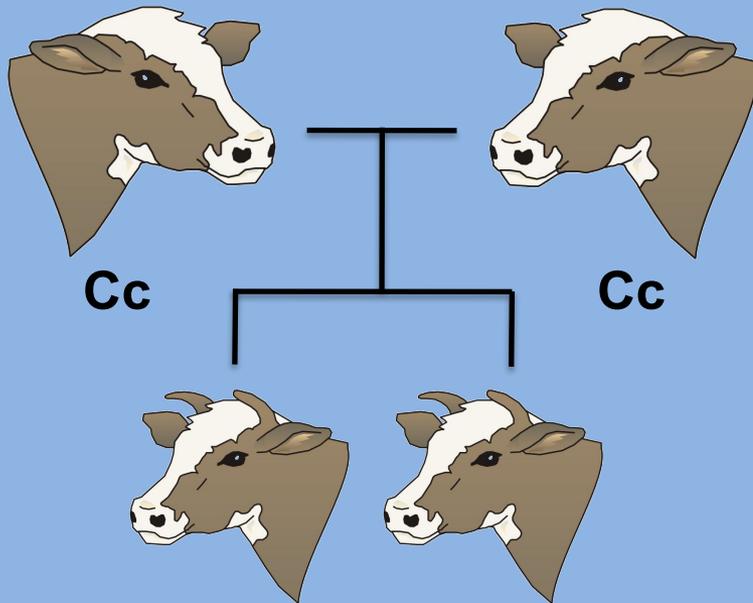
REPETIÇÃO DE
EVENTOS
INDEPENDENTES
(regra do “E”)

$$P = 1/6 * 1/6 = 1/36$$

Herança Mendeliana

PROBABILIDADES

vaca III

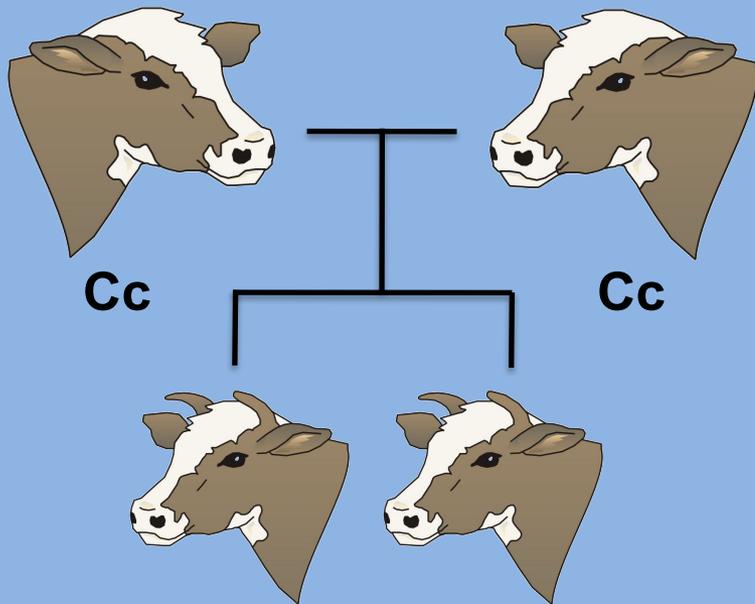


Qual a probabilidade
de ter chifres nas duas progênies?

Herança Mendeliana

PROBABILIDADES

vaca III



1^a

1 de 4 combinações

$$P = \frac{1}{4}$$

2^a

1 de 4 combinações

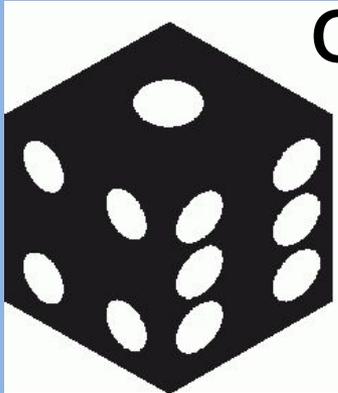
$$P = \frac{1}{4}$$

$$P = \frac{1}{4} * \frac{1}{4} = \frac{1}{16}$$

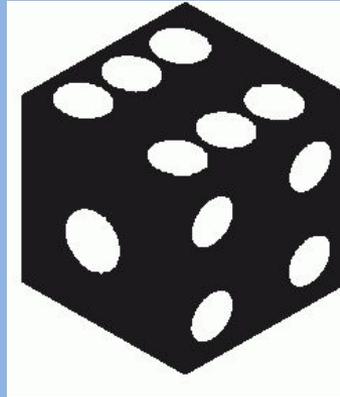
Qual a probabilidade de ter chifres nas duas progênie?

Herança Mendeliana

PROBABILIDADES

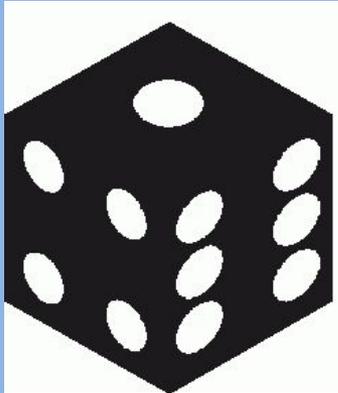


OU



Herança Mendeliana

PROBABILIDADES



1 OU 6

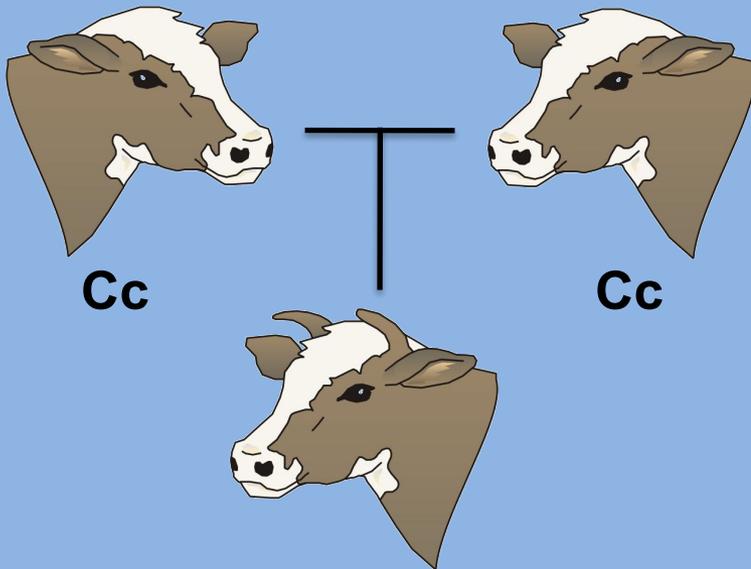
OCORRÊNCIA UM
EVENTO EM
OCASIÕES
INDEPENDENTES
(regra do “OU”)

$$P = 1/6 + 1/6 = 2/6$$

Herança Mendeliana

PROBABILIDADES

vaca III

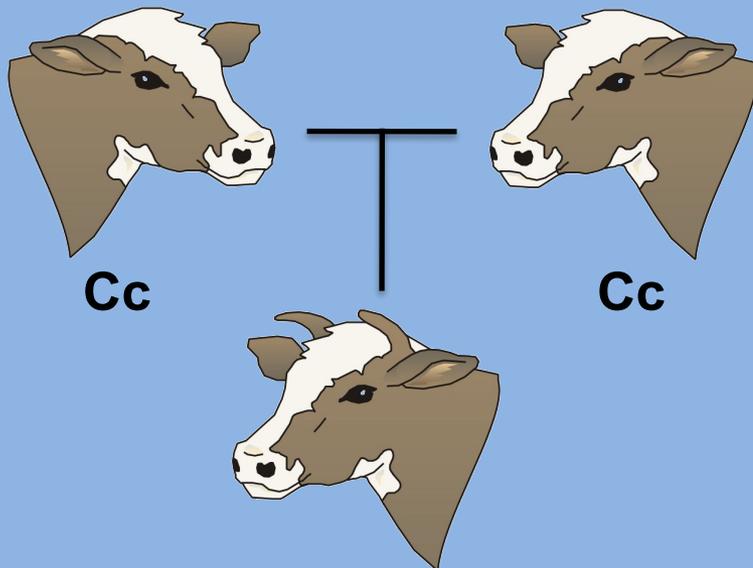


Qual a probabilidade
de ter chifres e ser macho?

Herança Mendeliana

PROBABILIDADES

vaca III



Qual a probabilidade
de ter chifres e ser macho?

Ter chifres:

1 de 4 combinações

$$P = \frac{1}{4}$$

Ser macho:

1 de 2 combinações

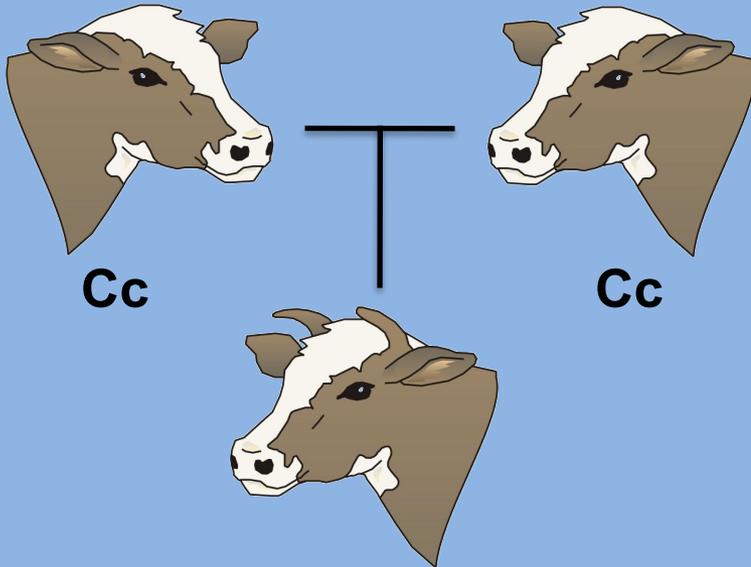
$$P = \frac{1}{2}$$

$$P = \frac{1}{4} * \frac{1}{2} = \frac{1}{8}$$

Herança Mendeliana

PROBABILIDADES

vaca III

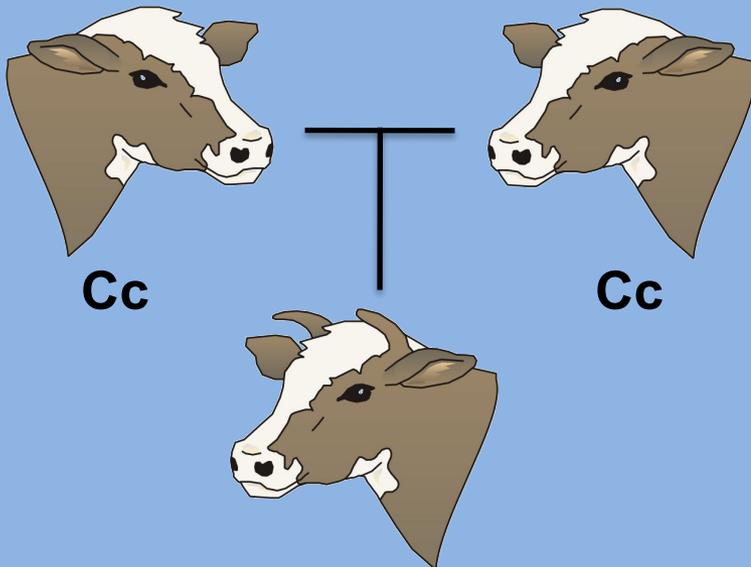


Qual a probabilidade
de ter chifres ou ser
macho?

Herança Mendeliana

PROBABILIDADES

vaca III



Qual a probabilidade
de ter chifres ou ser
macho?

Ter chifres:

1 de 4 combinações

$$P = \frac{1}{4}$$

Ser macho:

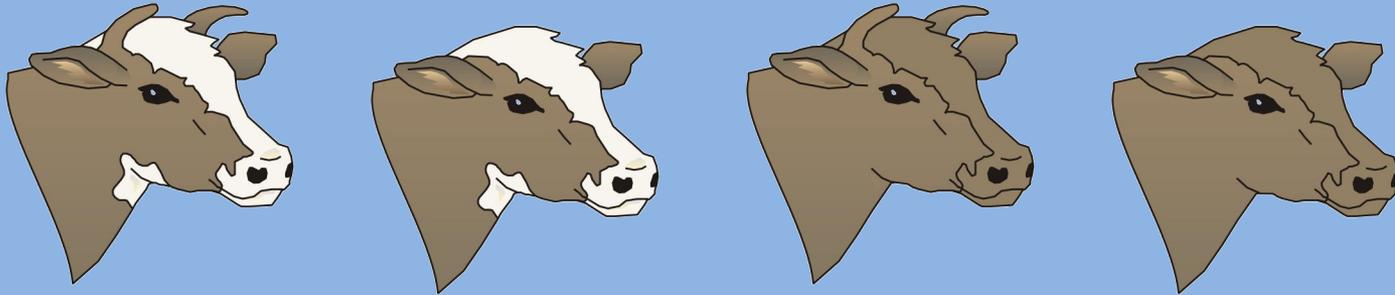
1 de 2 combinações

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

$$P = \frac{1}{4} + \frac{1}{2} = \frac{3}{4}$$

Herança Mendeliana

Segregação Independente



Herança Mendeliana

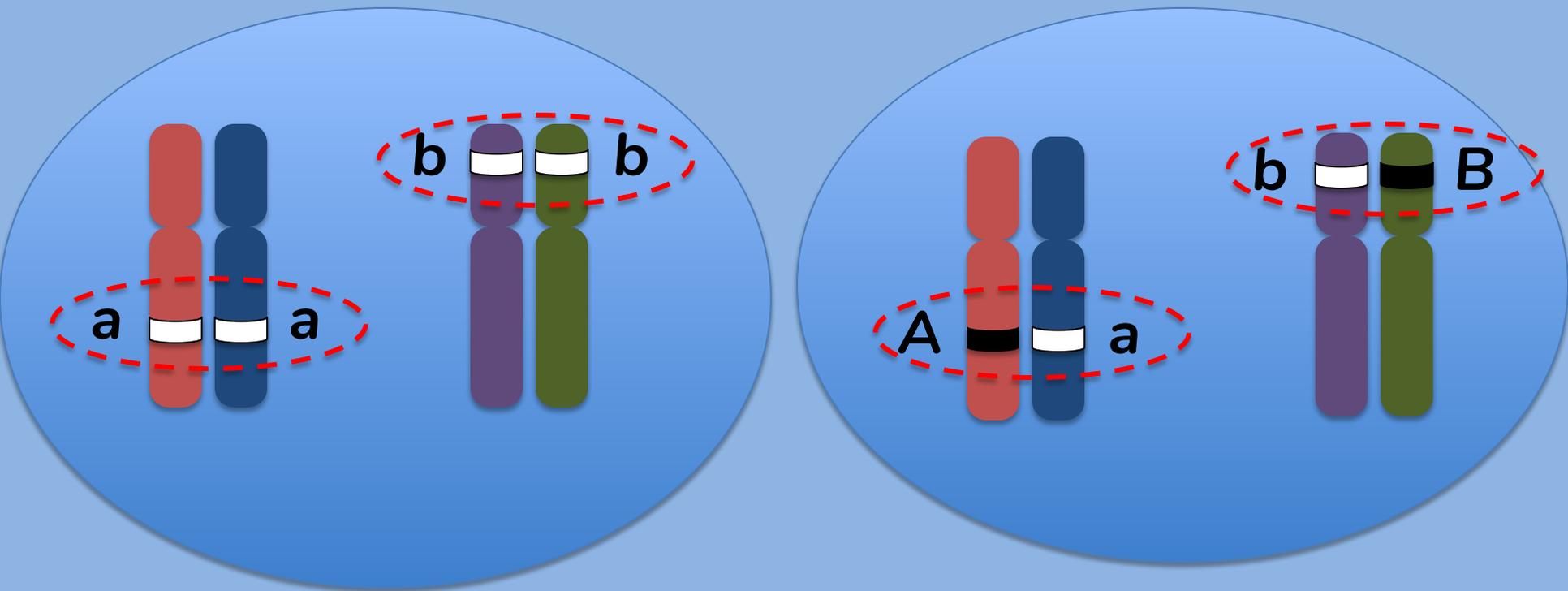
Segregação Independente



Chifres: autossômico recessivo (c)
Manchas: autossômico recessivo (m)

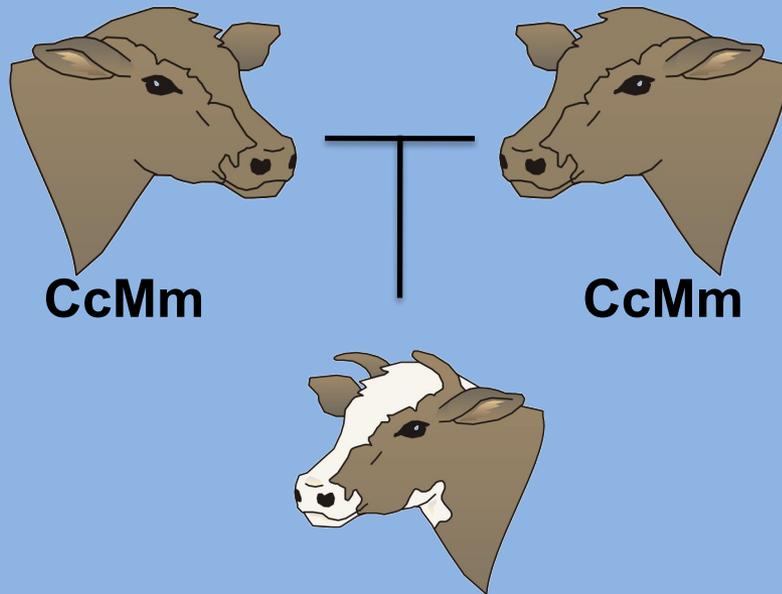
O que Mendel não sabia...

A base cromossômica da herança



Herança Mendeliana

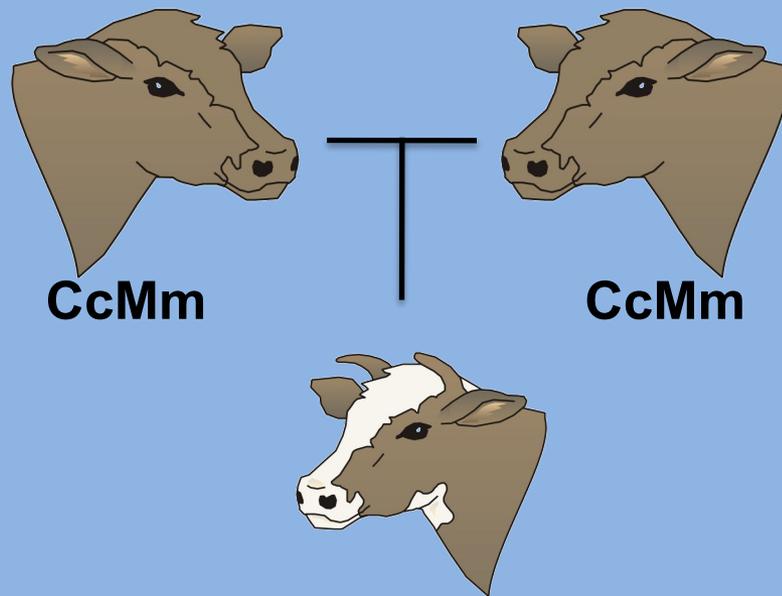
USANDO PROBABILIDADE



**Qual a probabilidade
de ter chifres e ser malhado?**

Herança Mendeliana

USANDO PROBABILIDADE



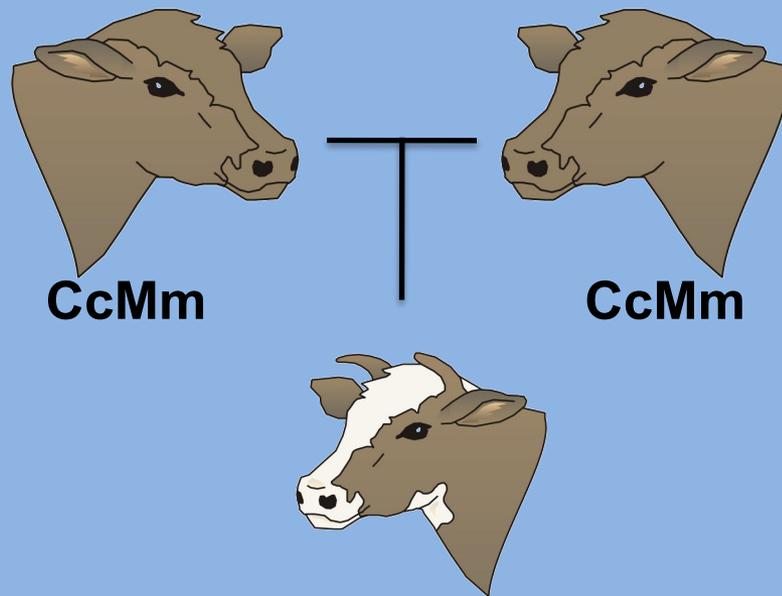
Ter chifres:
1 de 4 combinações
 $P = \frac{1}{4}$

Ser malhado:
1 de 4 combinações
 $P = \frac{1}{4}$

Qual a probabilidade
de ter chifres e ser malhado?

Herança Mendeliana

USANDO PROBABILIDADE



Qual a probabilidade de ter chifres e ser malhado?

Ter chifres:
1 de 4 combinações

$$P = \frac{1}{4}$$

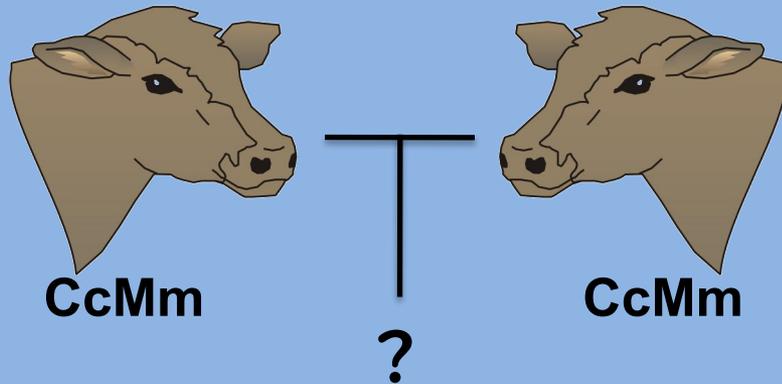
Ser malhado:
1 de 4 combinações

$$P = \frac{1}{4}$$

$$P = \frac{1}{4} * \frac{1}{4} = \frac{1}{16}$$

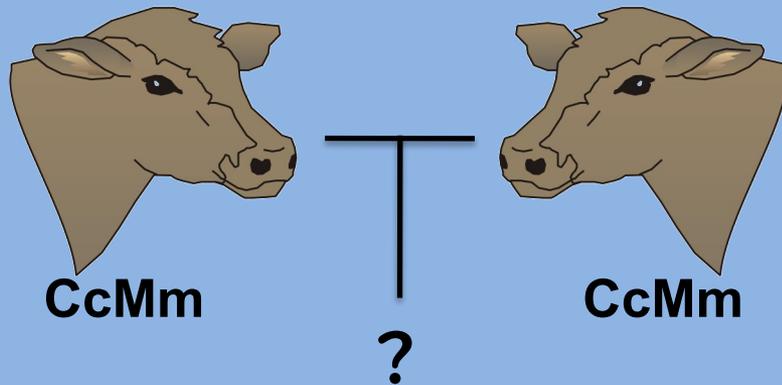
Herança Mendeliana

Segregação Independente



Herança Mendeliana

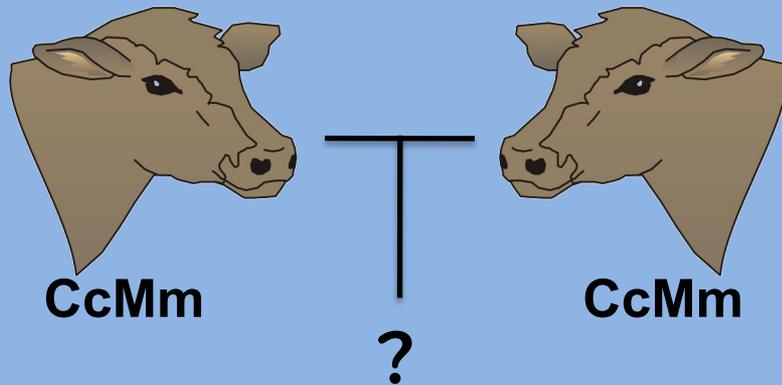
Segregação Independente



Quais são os possíveis gametas?

Herança Mendeliana

Segregação Independente



Quais são os possíveis gametas?

CM

Cm

cM

cm

Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

--	--	--	--

Cm

--	--	--	--

cM

--	--	--	--

cm

--	--	--	--

Herança Mendeliana

Segregação Independente

	CM	Cm	cM	cm
CM	CCMM	CCMm	CcMM	CcMm
Cm	CCMm	CCmm	CcMm	CCmm
cM	CcMm	CcMm	ccMM	ccMm
cm	CcMm	Ccmm	ccMm	ccmm

Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

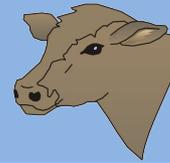
CCMM



CCMm



CcMM



CcMm



Cm

CCMm



CCmm



CcMm

Ccmm

cM

CcMm



CcMm



ccMM

ccMm

cm

CcMm



Ccmm

ccMm

ccmm

Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

CCMM



CCMm



CcMM



CcMm



Cm

CCMm



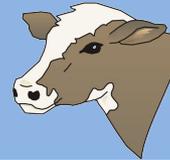
CCmm



CcMm



Ccmm



cM

CcMm



CcMm



ccMM

ccMm

cm

CcMm



Ccmm



ccMm

ccmm

Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

CCMM



CCMm



CcMM



CcMm



Cm

CCMm



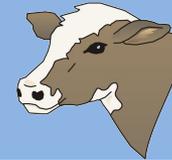
CCmm



CcMm



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cM

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ccMM



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ccMm



ccmm

Herança Mendeliana

Segregação Independente

CM

Cm

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CM

CCMM



CCMm



CcMM



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Cm

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cm

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ccmm



Herança Mendeliana

Segregação Independente

CM

Cm

cM

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CCMM



CCMm



CcMM



CcMm



Cm

CCMm



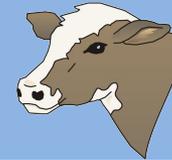
CCmm



CcMm



Ccmm



cM

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CcMm



ccMM



ccMm



cm

CcMm



Ccmm



ccMm



ccmm



Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

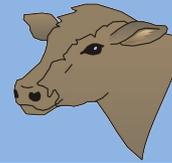
CCMM



CCMm



CcMM



CcMm



9



Cm

CCMm



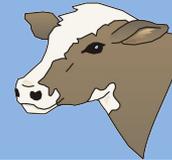
CCmm



CcMm



Ccmm



cM

CcMm



CcMm



ccMM



ccMm



cm

CcMm



Ccmm



ccMm



ccmm



Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

CCMM



CCMm



CcMM



CcMm



9



Cm

CCMm



CCmm



CcMm



Ccmm



3



cM

CcMm



CcMm



ccMM



ccMm



3



cm

CcMm



Ccmm



ccMm



ccmm



Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

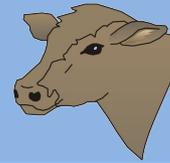
CCMM



CCMm



CcMM



CcMm



9



Cm

CCMm



CCmm



CcMm



Ccmm



3



cM

CcMm



CcMm



ccMM



ccMm



3



cm

CcMm



Ccmm



ccMm



ccmm



1



Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

CCMM



CCMm



CcMM



CcMm



Cm

CCMm



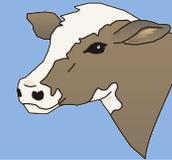
CCmm



CcMm



Ccmm



cM

CcMm



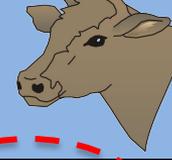
CcMm



ccMM



ccMm

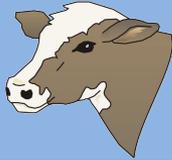


cm

CcMm



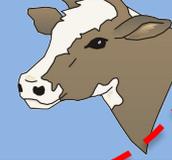
Ccmm



ccMm



ccmm



Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

CCMM



CCMm



CcMM



CcMm



Cm

CCMm



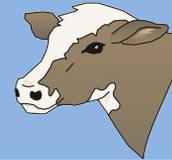
CCmm



CcMm



Ccmm



cM

CcMm



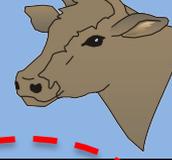
CcMm



ccMM



ccMm



cm

CcMm



Ccmm



ccMm



ccmm



1 em 16

Herança Mendeliana

Segregação Independente

CM

Cm

cM

cm

CM

CCMM



CCMm



CcMM



CcMm



Cm

CCMm



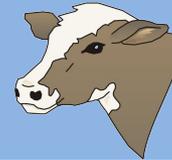
CCmm



CcMm



Ccmm



cM

CcMm



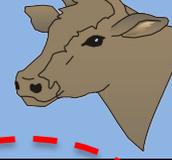
CcMm



ccMM



ccMm



cm

CcMm



Ccmm



ccMm



ccmm



1 em 16

1/16

O que Mendel não sabia...

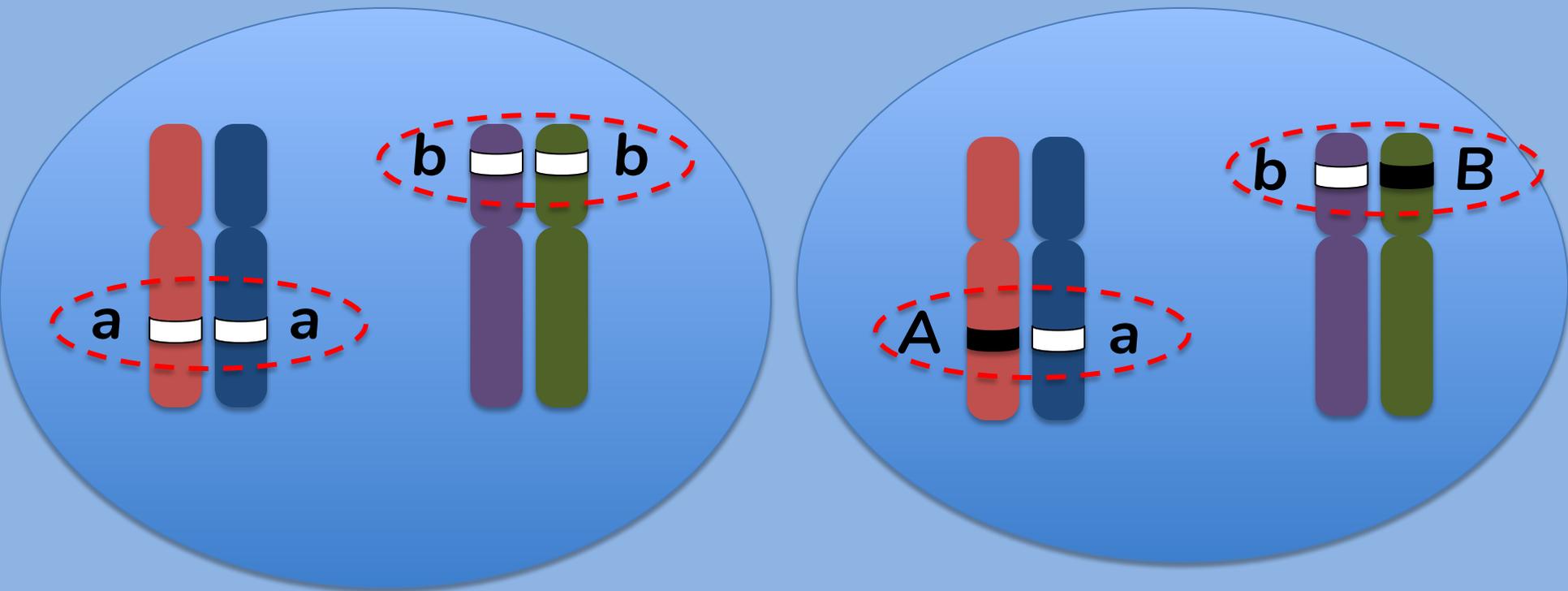
A base cromossômica da herança

A segunda lei de Mendel: chamada de lei da segregação independente dos genes

Durante a formação de gametas, a segregação dos alelos de um gene é independente da segregação dos alelos de outro gene.

O que Mendel não sabia...

A base cromossômica da herança



O que Mendel não sabia...

A base cromossômica da herança

