

GUIA DO PROFESSOR

Bingo da óptica

40 CARTELAS ILUSTRADAS

OBJETIVO

Distinguir fenômenos ópticos e interpretar esquemas simples de propagação da luz.

PREPARAÇÃO

Imprima uma cartela por aluno. Recorte as cartas de chamada do final do PDF, embaralhe-as e leia uma pista por vez. Use marcadores reutilizáveis.

COMO JOGAR

O estudante procura a imagem e o conceito correspondentes à pista e marca a casa. Vence quem completar linha, coluna ou diagonal. Antes de confirmar o bingo, peça a justificativa de duas marcações e confira o gabarito.

MEDIAÇÃO PEDAGÓGICA

Compare reflexão e refração; os desenhos são modelos simplificados, não fotografias de experimentos.

O QUE O ARQUIVO CONTÉM

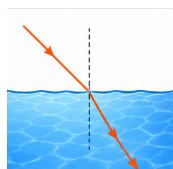
40 cartelas diferentes de 9 casas; 12 cartas de chamada; gabarito com resposta prevista para cada pista.

Os desenhos representam situações e conceitos. Faça a leitura da pista, não da resposta; valorize a explicação do estudante. Adapte a discussão ao currículo da sua rede.

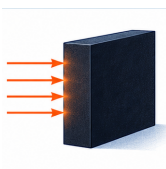
CARTELAS PARA RECORTAR

CARTELA 01

Nome: _____



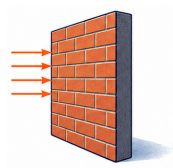
Refração



Absorção



Transparente



Opaco



Sombra



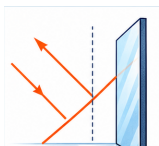
Translúcido



Dispersão



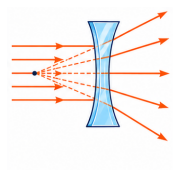
Penumbra



Reflexão

CARTELA 02

Nome: _____



Lente divergente



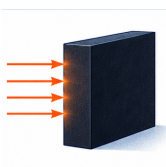
Dispersão



Penumbra



Sombra



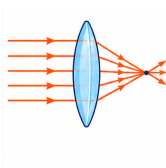
Absorção



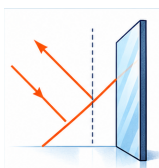
Transparente



Translúcido



Lente convergente

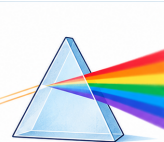
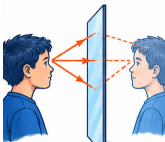
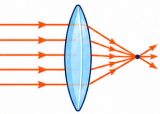
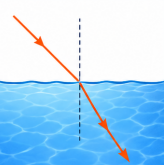
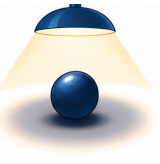
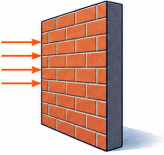
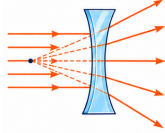


Reflexão

CARTELAS PARA RECORTAR

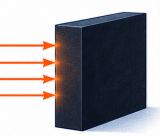
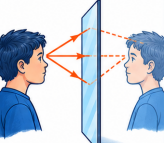
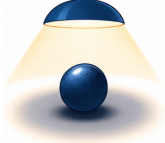
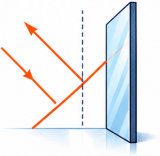
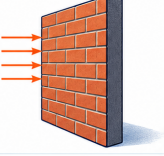
CARTELA 03

Nome: _____

 Sombra	 Dispersão	 Imagem em espelho plano
 Lente convergente	 Refração	 Transparente
 Penumbra	 Opaco	 Lente divergente

CARTELA 04

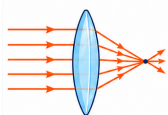
Nome: _____

 Absorção	 Imagem em espelho plano	 Penumbra
 Transparente	 Dispersão	 Sombra
 Reflexão	 Opaco	 Translúcido

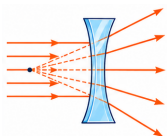
CARTELAS PARA RECORTAR

CARTELA 05

Nome: _____



Lente convergente



Lente divergente



Sombra



Transparente

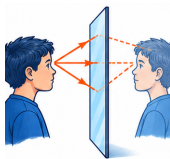
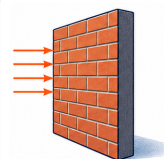
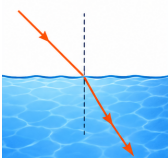


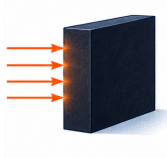
Imagem em espelho plano



Opaco



Refração



Absorção



Dispersão

CARTELA 06

Nome: _____

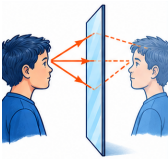
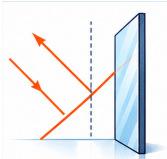
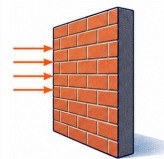


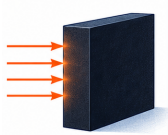
Imagem em espelho plano



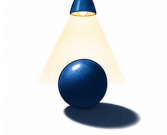
Reflexão



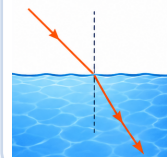
Opaco



Absorção



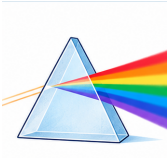
Sombra



Refração



Transparente



Dispersão



Translúcido

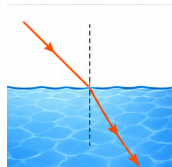
CARTELAS PARA RECORTAR

CARTELA 07

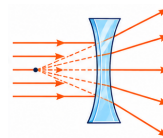
Nome: _____



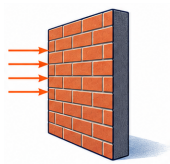
Translúcido



Refração



Lente divergente



Opaco

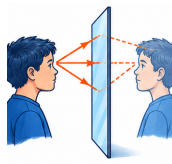


Imagem em espelho plano



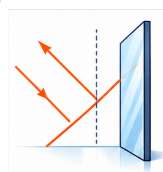
Sombra



Penumbra



Dispersão



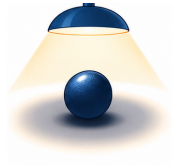
Reflexão

CARTELA 08

Nome: _____



Translúcido



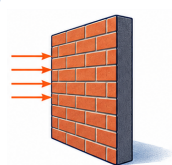
Penumbra



Transparente



Sombra



Opaco

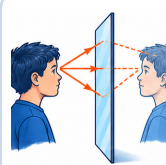
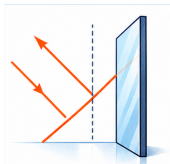
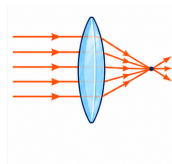


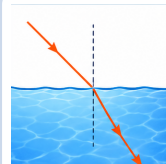
Imagem em espelho plano



Reflexão



Lente convergente

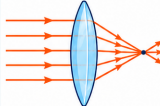
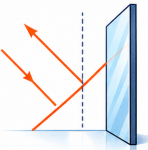
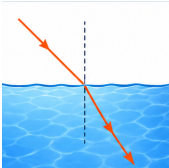
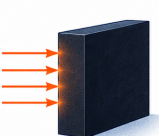
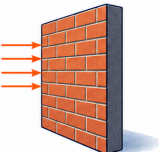
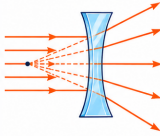


Refração

CARTELAS PARA RECORTAR

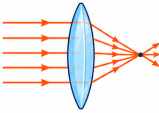
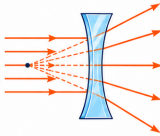
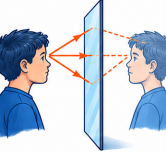
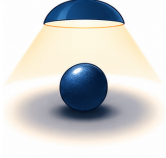
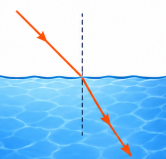
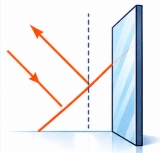
CARTELA 09

Nome: _____

 Sombra	 Transparente	 Lente convergente
 Reflexão	 Refração	 Penumbra
 Absorção	 Opaco	 Lente divergente

CARTELA 10

Nome: _____

 Lente convergente	 Sombra	 Lente divergente
 Imagem em espelho plano	 Dispersão	 Penumbra
 Refração	 Translúcido	 Reflexão

CARTELAS PARA RECORTAR

CARTELA 11

Nome: _____

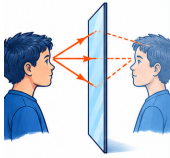


Imagem em
espelho plano



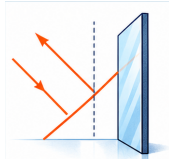
Penumbra



Sombra



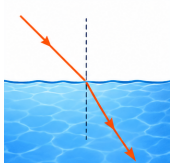
Transparente



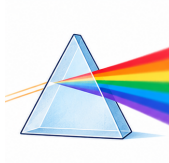
Reflexão



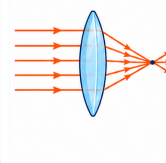
Translúcido



Refração



Dispersão



Lente convergente

CARTELA 12

Nome: _____



Penumbra

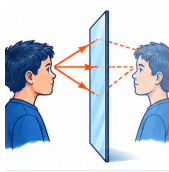
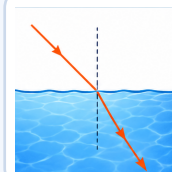
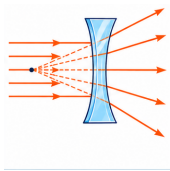


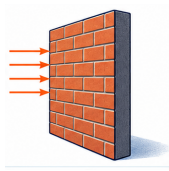
Imagem em
espelho plano



Refração



Lente divergente



Opaco



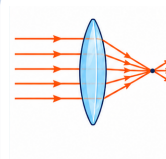
Sombra



Translúcido



Transparente

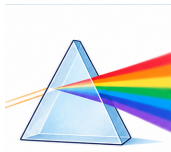


Lente convergente

CARTELAS PARA RECORTAR

CARTELA 13

Nome: _____



Dispersão

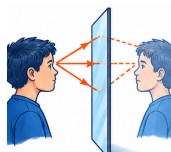
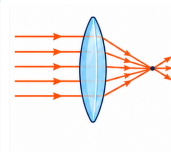


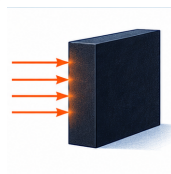
Imagem em espelho plano



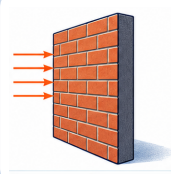
Lente convergente



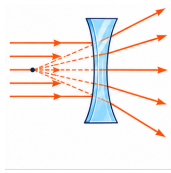
Sombra



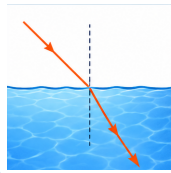
Absorção



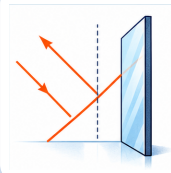
Opaco



Lente divergente



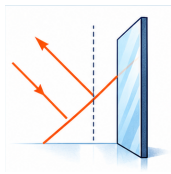
Refração



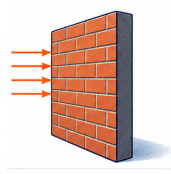
Reflexão

CARTELA 14

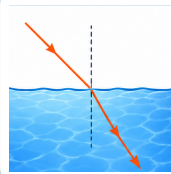
Nome: _____



Reflexão



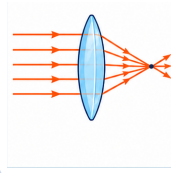
Opaco



Refração



Transparente



Lente convergente

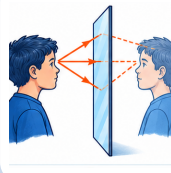
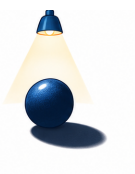


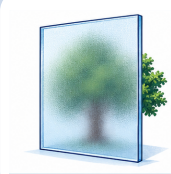
Imagem em espelho plano



Sombra



Penumbra

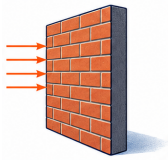


Translúcido

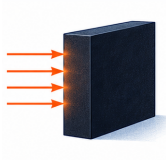
CARTELAS PARA RECORTAR

CARTELA 15

Nome: _____



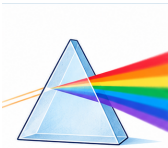
Opaco



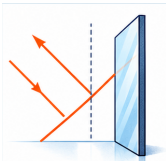
Absorção



Sombra



Dispersão



Reflexão

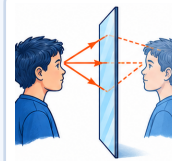
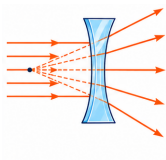


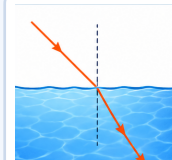
Imagem em espelho plano



Translúcido



Lente divergente



Refração

CARTELA 16

Nome: _____

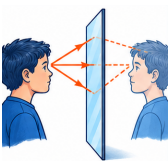
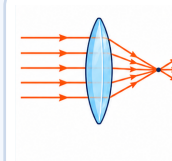


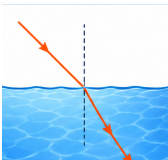
Imagem em espelho plano



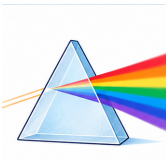
Transparente



Lente convergente



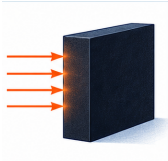
Refração



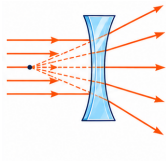
Dispersão



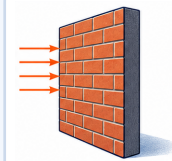
Penumbra



Absorção



Lente divergente

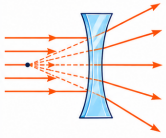


Opaco

CARTELAS PARA RECORTAR

CARTELA 17

Nome: _____



Lente divergente



Transparente

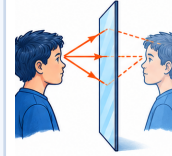
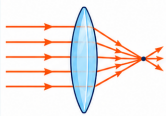


Imagem em espelho plano



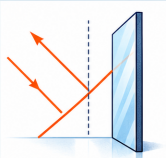
Lente convergente



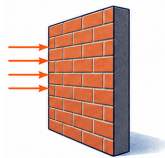
Penumbra



Sombra



Reflexão



Opaco



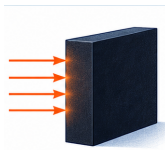
Dispersão

CARTELA 18

Nome: _____



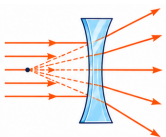
Dispersão



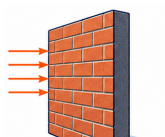
Absorção



Sombra



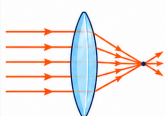
Lente divergente



Opaco



Penumbra



Lente convergente



Transparente

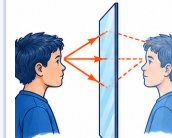
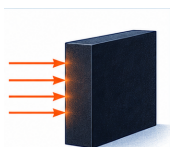


Imagem em espelho plano

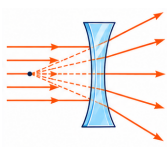
CARTELAS PARA RECORTAR

CARTELA 19

Nome: _____



Absorção



Lente divergente



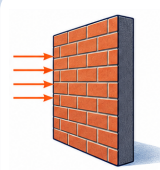
Translúcido



Dispersão



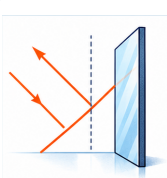
Sombra



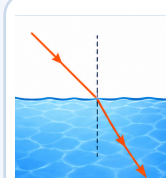
Opaco



Penumbra



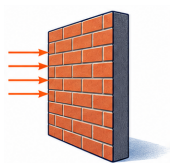
Reflexão



Refração

CARTELA 20

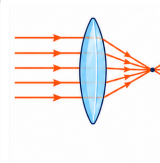
Nome: _____



Opaco



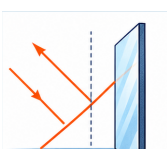
Transparente



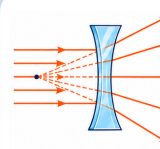
Lente convergente



Dispersão



Reflexão



Lente divergente



Penumbra

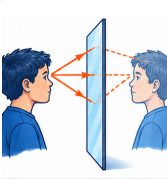
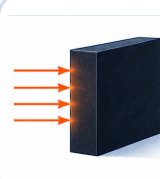


Imagem em
espelho plano

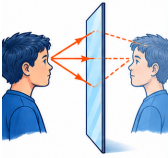
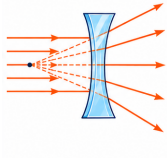
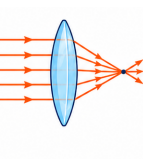
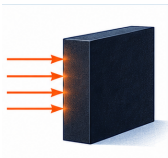
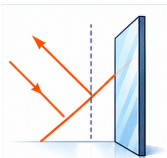
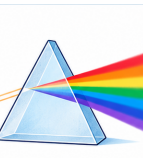


Absorção

CARTELAS PARA RECORTAR

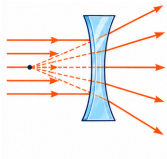
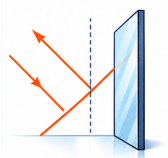
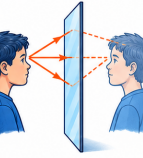
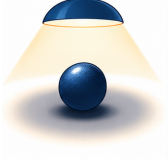
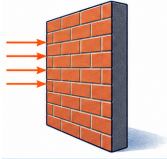
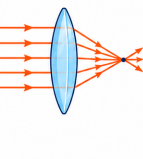
CARTELA 21

Nome: _____

 Imagem em espelho plano	 Lente divergente	 Transparente
 Penumbra	 Sombra	 Lente convergente
 Absorção	 Reflexão	 Dispersão

CARTELA 22

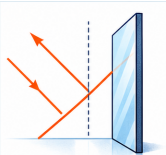
Nome: _____

 Transparente	 Lente divergente	 Sombra
 Reflexão	 Translúcido	 Imagem em espelho plano
 Penumbra	 Opaco	 Lente convergente

CARTELAS PARA RECORTAR

CARTELA 23

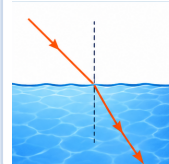
Nome: _____



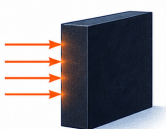
Reflexão



Penumbra



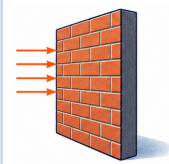
Refração



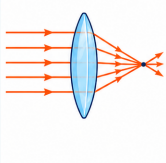
Absorção



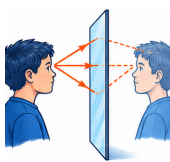
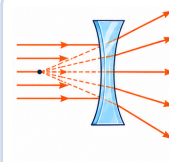
Dispersão



Opaco



Lente convergente

Imagem em
espelho plano

Lente divergente

CARTELA 24

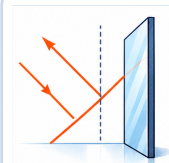
Nome: _____



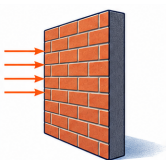
Sombra



Translúcido



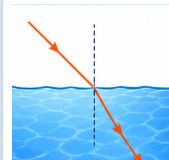
Reflexão



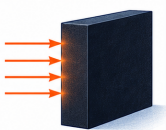
Opaco



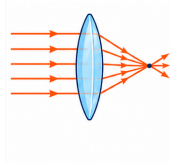
Transparente



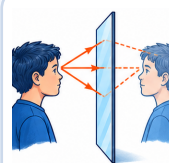
Refração



Absorção



Lente convergente

Imagem em
espelho plano

CARTELAS PARA RECORTAR

CARTELA 25

Nome: _____



Translúcido

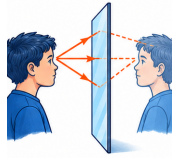
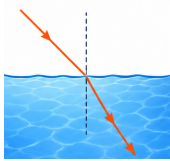


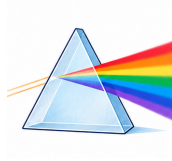
Imagem em
espelho plano



Transparente



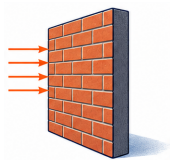
Refração



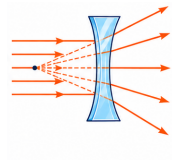
Dispersão



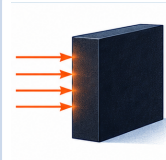
Sombra



Opaco



Lente divergente



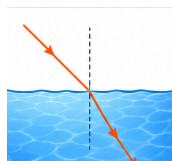
Absorção

CARTELA 26

Nome: _____



Penumbra



Refração

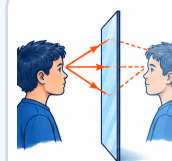
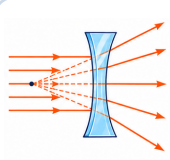
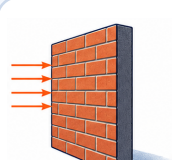


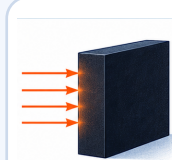
Imagem em
espelho plano



Lente divergente



Opaco



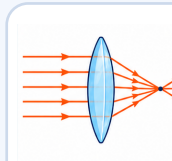
Absorção



Sombra



Transparente

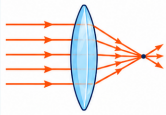


Lente convergente

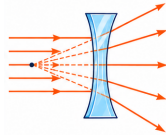
CARTELAS PARA RECORTAR

CARTELA 27

Nome: _____



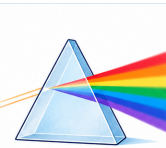
Lente convergente



Lente divergente



Penumbra



Dispersão

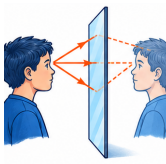
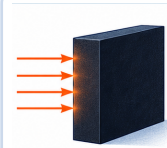
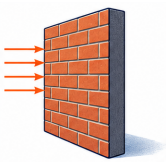


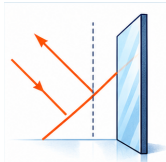
Imagem em espelho plano



Absorção



Opaco



Reflexão



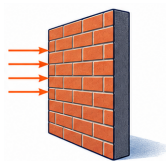
Sombra

CARTELA 28

Nome: _____



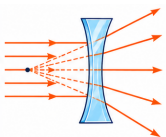
Translúcido



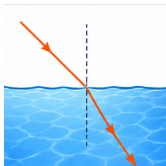
Opaco



Penumbra



Lente divergente



Refração

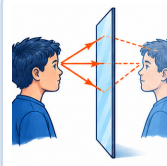
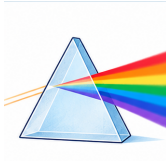


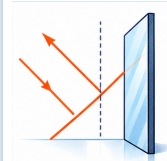
Imagem em espelho plano



Transparente



Dispersão

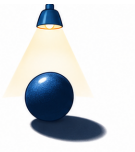


Reflexão

CARTELAS PARA RECORTAR

CARTELA 29

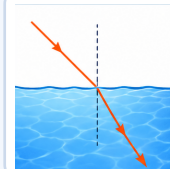
Nome: _____



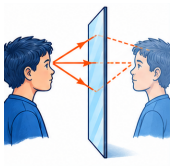
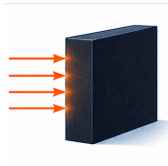
Sombra



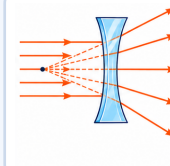
Penumbra



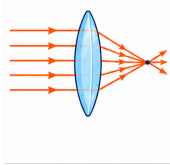
Refração

Imagem em
espelho plano

Absorção



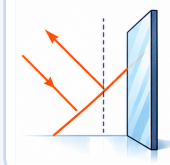
Lente divergente



Lente convergente



Transparente



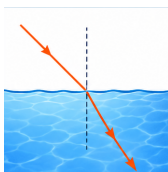
Reflexão

CARTELA 30

Nome: _____



Sombra



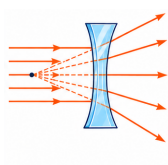
Refração



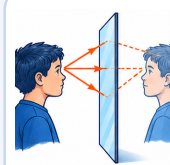
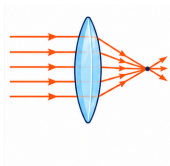
Transparente



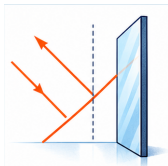
Dispersão



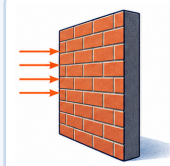
Lente divergente

Imagem em
espelho plano

Lente convergente



Reflexão



Opaco

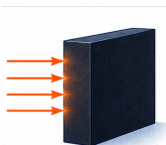
CARTELAS PARA RECORTAR

CARTELA 31

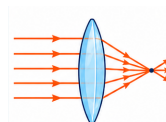
Nome: _____



Penumbra



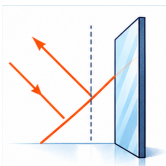
Absorção



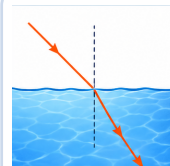
Lente convergente



Translúcido



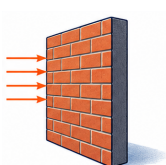
Reflexão



Refração



Sombra



Opaco

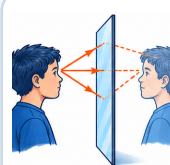
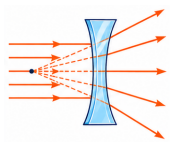


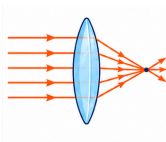
Imagem em espelho plano

CARTELA 32

Nome: _____



Lente divergente



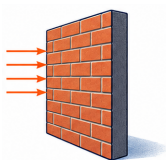
Lente convergente



Dispersão



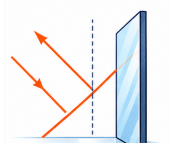
Transparente



Opaco



Translúcido



Reflexão



Penumbra

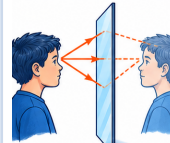


Imagem em espelho plano

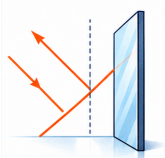
CARTELAS PARA RECORTAR

CARTELA 33

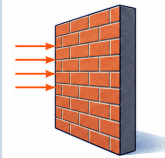
Nome: _____



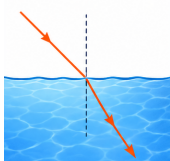
Translúcido



Reflexão



Opaco



Refração

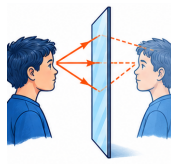
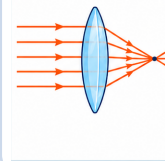


Imagem em
espelho plano



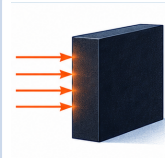
Lente convergente



Sombra



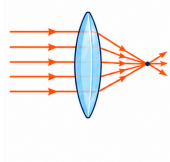
Transparente



Absorção

CARTELA 34

Nome: _____



Lente convergente



Penumbra

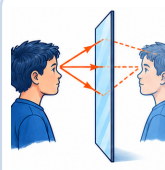


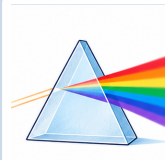
Imagem em
espelho plano



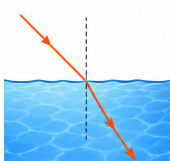
Transparente



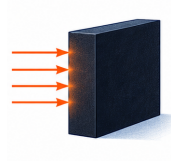
Translúcido



Dispersão



Refração



Absorção

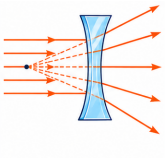
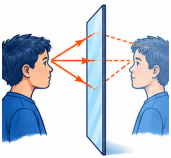
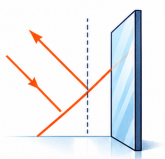
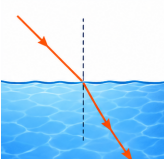
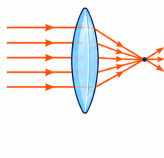


Sombra

CARTELAS PARA RECORTAR

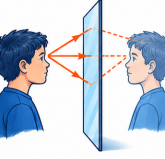
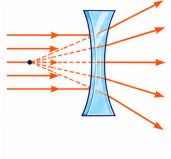
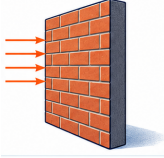
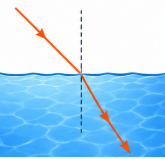
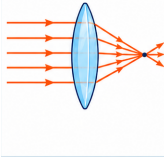
CARTELA 35

Nome: _____

 Lente divergente	 Imagem em espelho plano	 Dispersão
 Reflexão	 Transparente	 Refração
 Translúcido	 Sombra	 Lente convergente

CARTELA 36

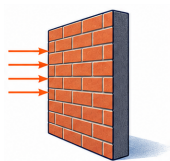
Nome: _____

 Imagem em espelho plano	 Lente divergente	 Transparente
 Sombra	 Dispersão	 Opaco
 Refração	 Penumbra	 Lente convergente

CARTELAS PARA RECORTAR

CARTELA 37

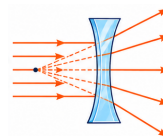
Nome: _____



Opaco



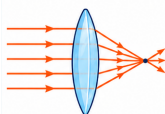
Transparente



Lente divergente



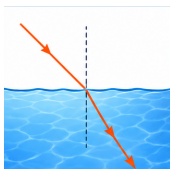
Penumbra



Lente convergente



Dispersão



Refração



Translúcido

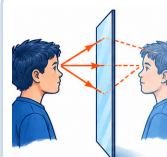


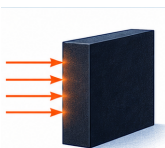
Imagem em espelho plano

CARTELA 38

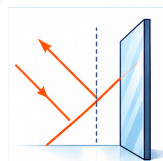
Nome: _____



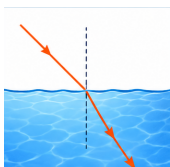
Dispersão



Absorção



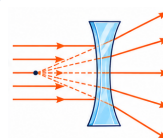
Reflexão



Refração



Sombra



Lente divergente



Translúcido



Penumbra

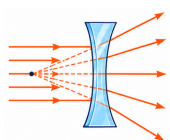


Transparente

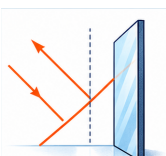
CARTELAS PARA RECORTAR

CARTELA 39

Nome: _____



Lente divergente



Reflexão

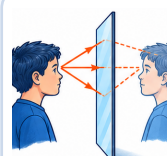
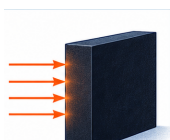
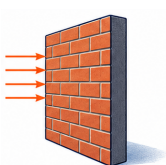


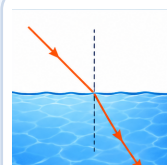
Imagem em espelho plano



Absorção



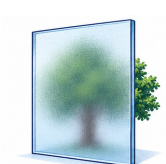
Opaco



Refração



Sombra



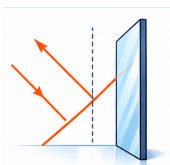
Translúcido



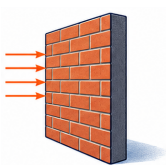
Dispersão

CARTELA 40

Nome: _____



Reflexão



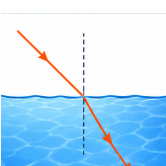
Opaco



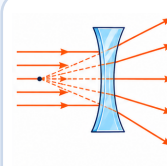
Sombra



Penumbra



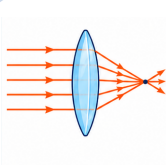
Refração



Lente divergente



Dispersão



Lente convergente



Translúcido

CARTAS DE CHAMADA • RECORTAR

Embaralhe e leia somente a pista. A resposta fica no gabarito.

01

A luz muda de direção e volta ao encontrar uma superfície.

02

A luz muda de direção ao atravessar meios em que sua velocidade é diferente.

03

A luz branca se separa em cores ao atravessar um prisma.

04

Parte da energia luminosa é retida pelo material.

05

Material permite enxergar com nitidez um objeto atrás dele.

06

Material deixa passar luz, mas não permite ver com nitidez através dele.

CARTAS DE CHAMADA • RECORTAR

Embaralhe e leia somente a pista. A resposta fica no gabarito.

07

Material não permite a passagem direta de luz visível.

08

Imagem virtual aparece atrás do espelho plano, à mesma distância do objeto.

09

Lente faz raios paralelos tenderem a se encontrar após atravessá-la.

10

Lente faz raios paralelos se afastarem após atravessá-la.

11

Região não recebe luz direta por causa de um obstáculo.

12

Região recebe apenas parte da luz de uma fonte extensa.

GABARITO • CONFERÊNCIA

01 Reflexão

A luz muda de direção e volta ao encontrar uma superfície.

02 Refração

A luz muda de direção ao atravessar meios em que sua velocidade é diferente.

03 Dispersão

A luz branca se separa em cores ao atravessar um prisma.

04 Absorção

Parte da energia luminosa é retida pelo material.

05 Transparente

Material permite enxergar com nitidez um objeto atrás dele.

06 Translúcido

Material deixa passar luz, mas não permite ver com nitidez através dele.

07 Opaco

Material não permite a passagem direta de luz visível.

08 Imagem em espelho plano

Imagem virtual aparece atrás do espelho plano, à mesma distância do objeto.

09 Lente convergente

Lente faz raios paralelos tenderem a se encontrar após atravessá-la.

10 Lente divergente

Lente faz raios paralelos se afastarem após atravessá-la.

11 Sombra

Região não recebe luz direta por causa de um obstáculo.

12 Penumbra

Região recebe apenas parte da luz de uma fonte extensa.

Confira a justificativa: a imagem sozinha não substitui o conceito.