



GEOMETRÍA

⋮

Programa

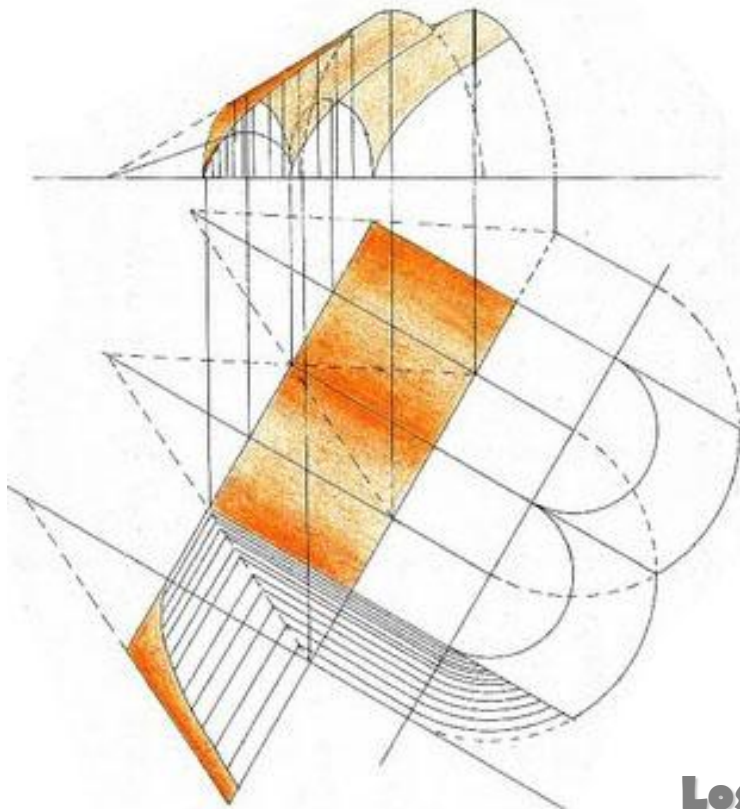
Año 2012.

GEOMETRIA

IDIOMA

LENGUAJE

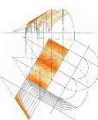
DEL DISEÑO



Las PALABRAS para el LENGUAJE

Las NOTAS para la MÚSICA

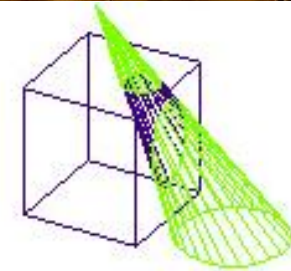
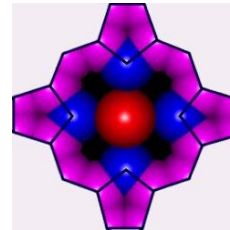
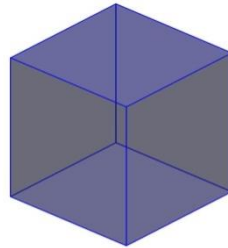
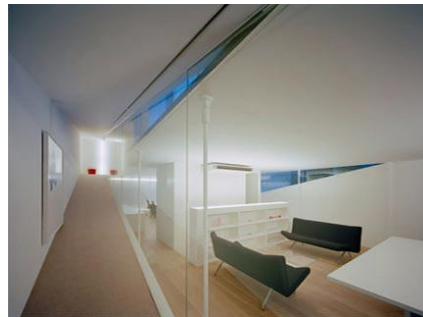
Los NUMEROS para las MATEMÁTICAS



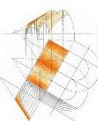


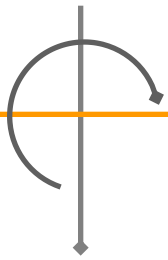
Geometría.

•Un lenguaje estructurado.



ESTRUCTURA Y LENGUAJE

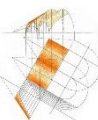
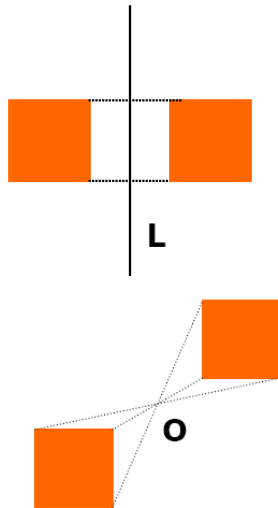


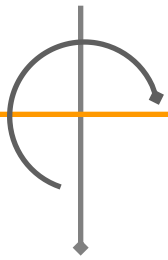


Lenguaje estructurado expresado en.

- Espacios Públicos.

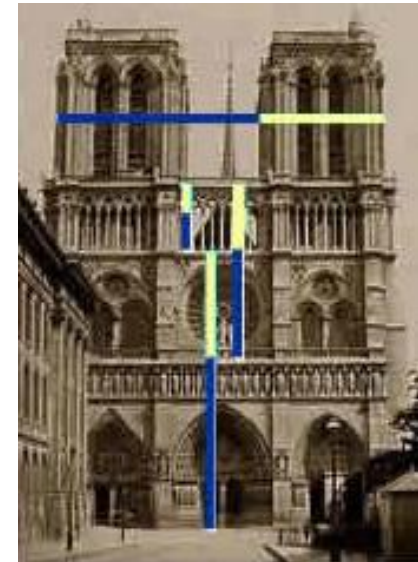
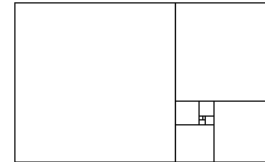
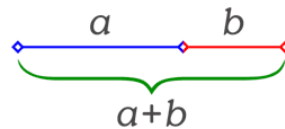
■ Simetría



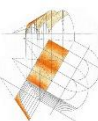


Lenguaje estructurado expresado en.

- Proporción Áurea.



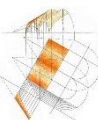
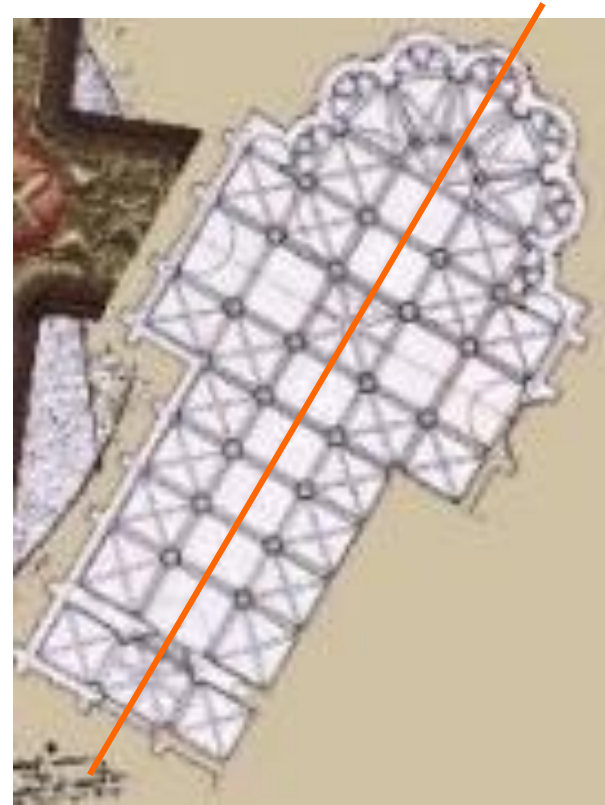
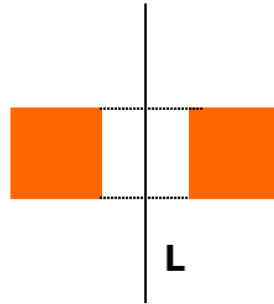
DIVINA PROPORCIÓN/ PROPORCIÓN AUREA

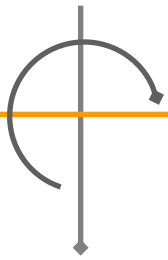




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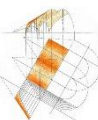
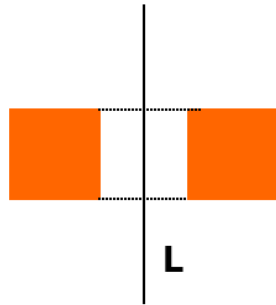
- Patrones Simétricos.

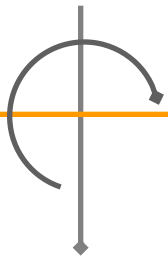




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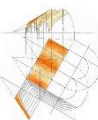
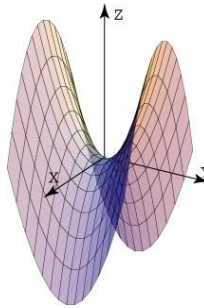
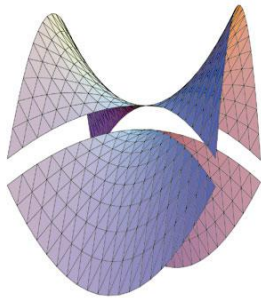
•Infraestructura.

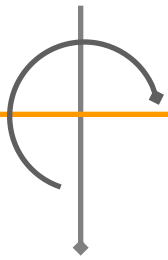




Lenguaje estructurado expresado en.

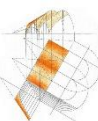
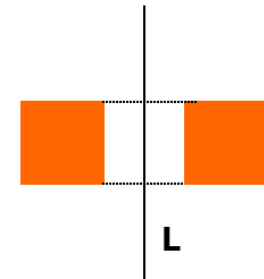
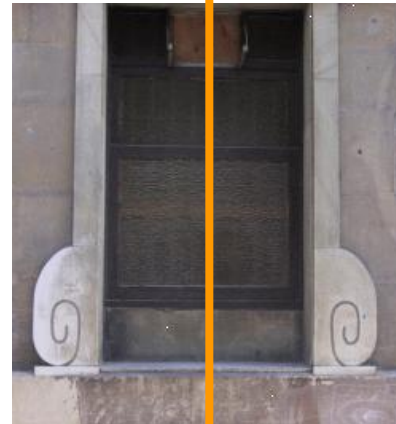
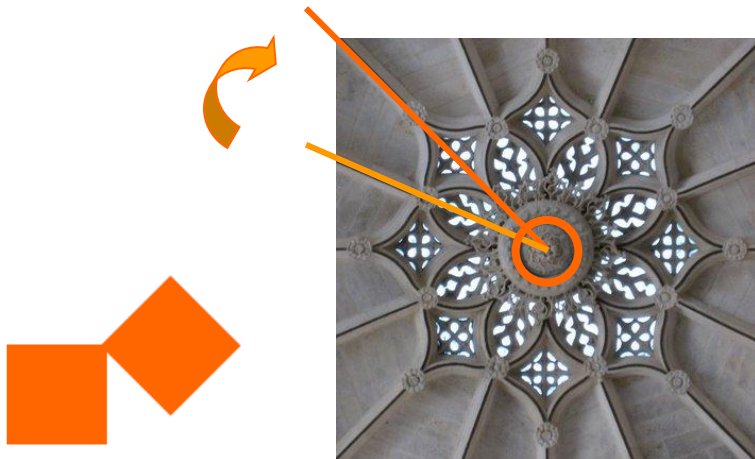
•Superficies regladas





Lenguaje estructurado expresado en.

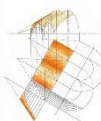
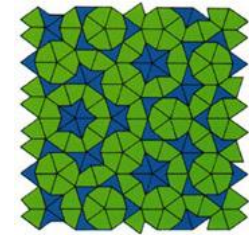
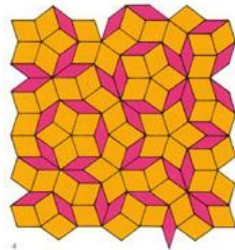
- Terminaciones.





Lenguaje estructurado expresado en.

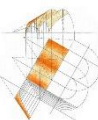
- Ornamentos.

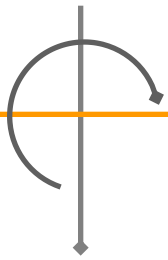




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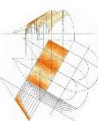
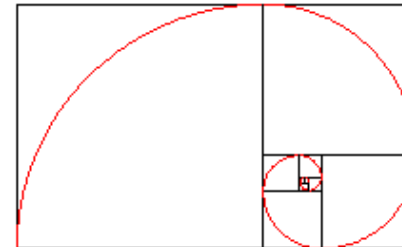
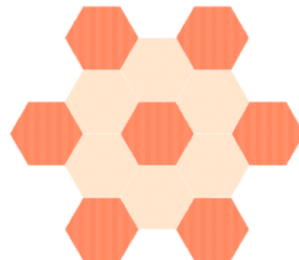
- Mobiliario.

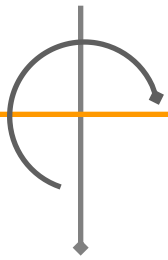




Lenguaje estructurado expresado en.

•Flora y Fauna

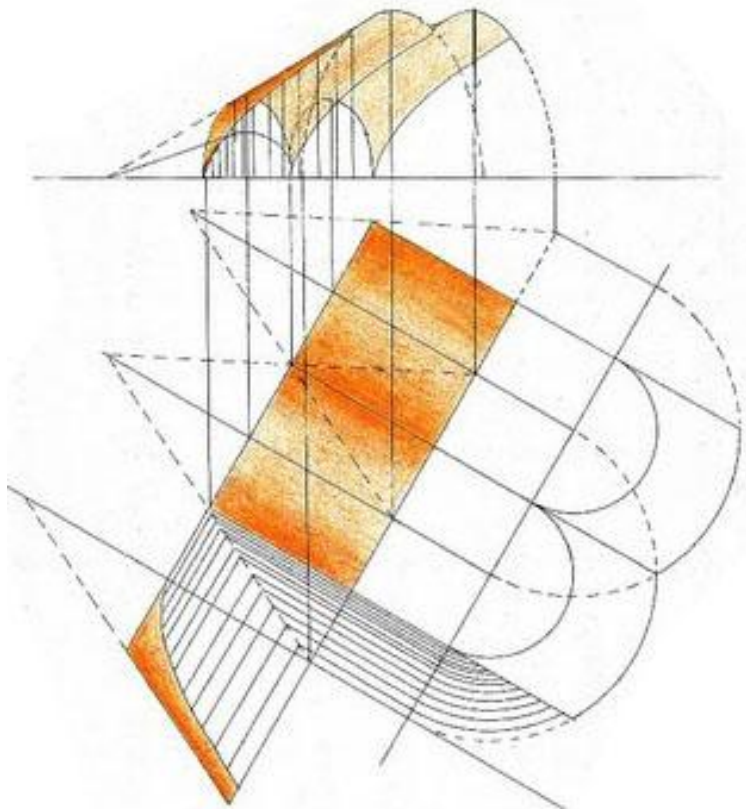




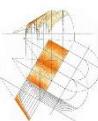
GEOMETRÍA



Programa Año 2012.

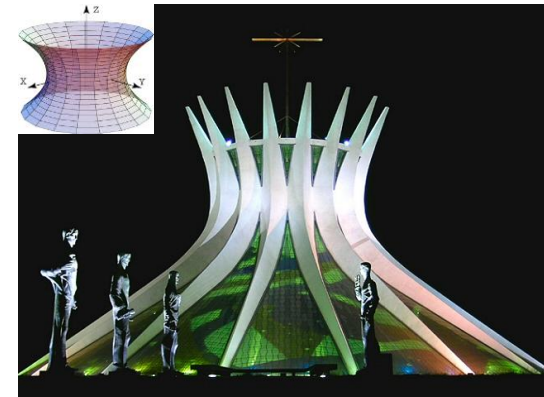
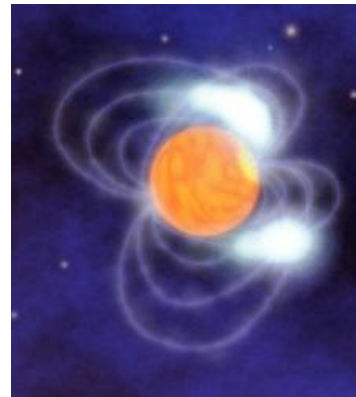
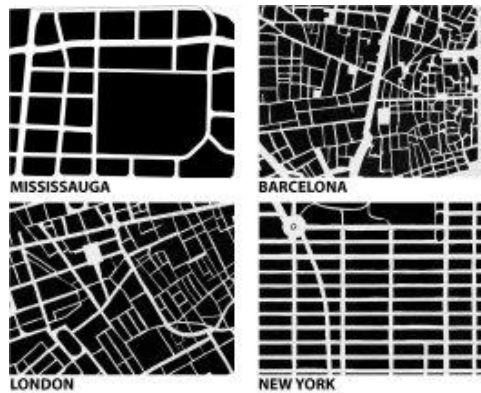


CONTENIDOS PROGRAMATICOS

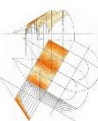


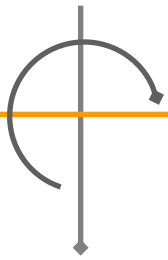


Descripción.

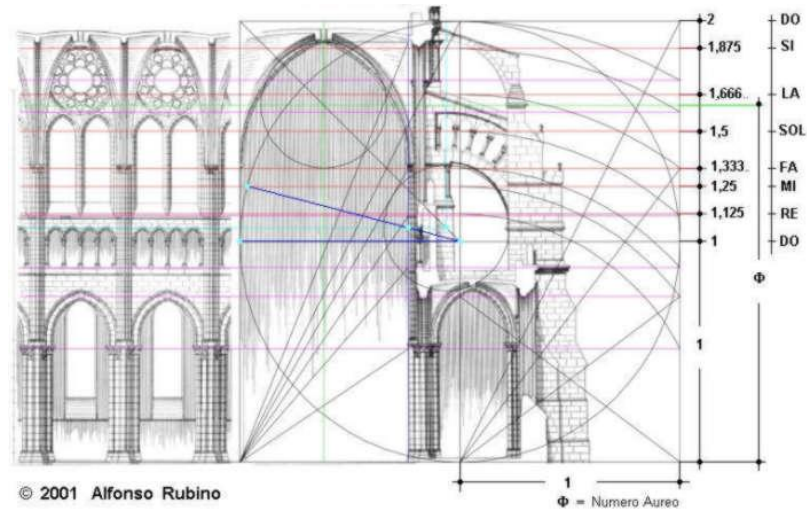
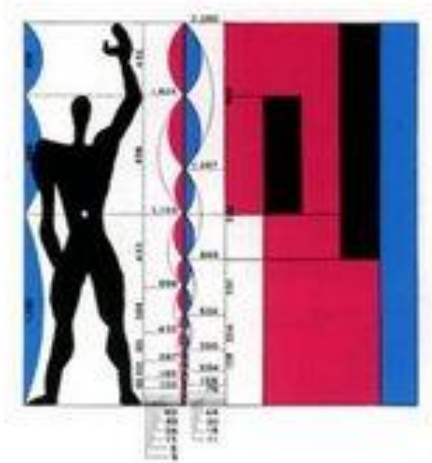


- Actividad graduada y orientada.

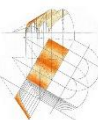


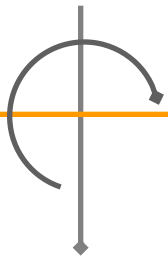


Objetivo Intelectual.

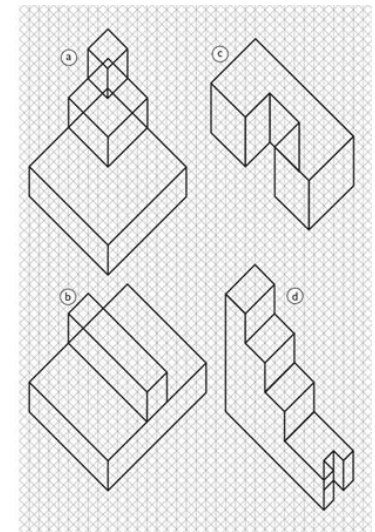
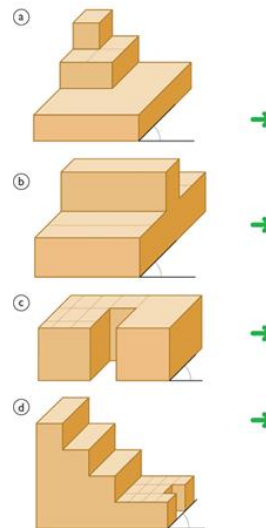
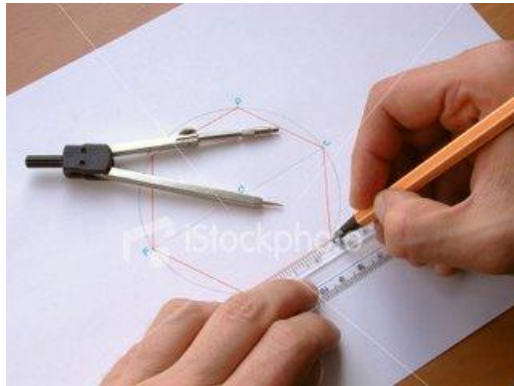


- Forma y orienta al concepto y la ley, a fin de medir e intuir el espacio.

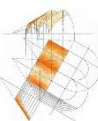


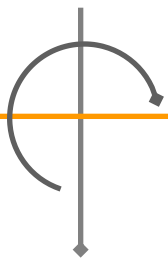


Objetivo Psicomotor.

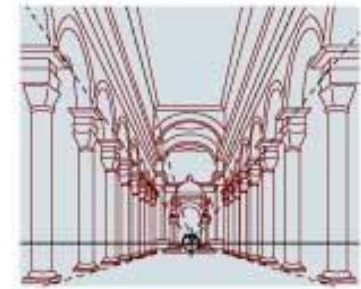
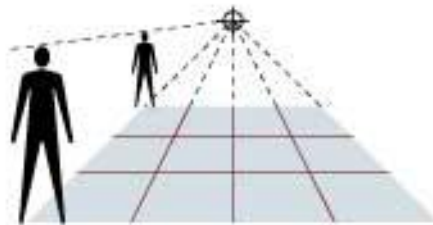


- Habilita entregando técnicas de representación espacial y manejo mecánico e instrumental.

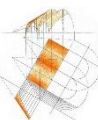




Objetivo Psicomotor.

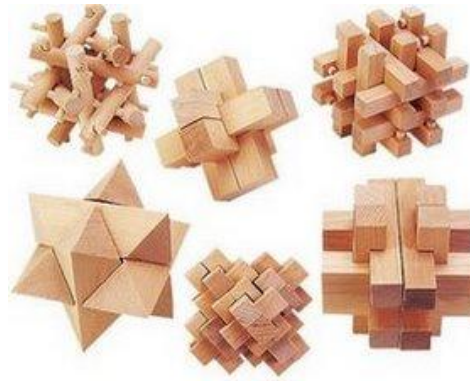
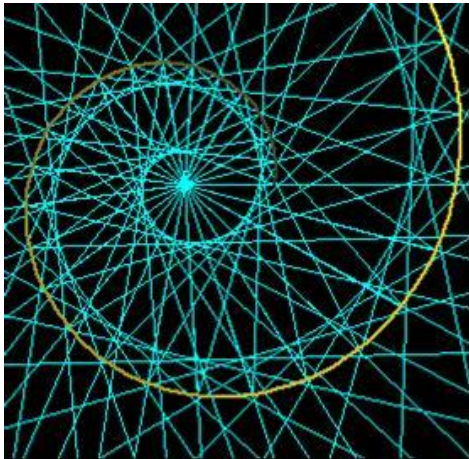


- Habilidad para expresar el espacio a través del lenguaje geométrico.

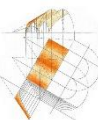




Objetivo Afectivo.



- Estimula la exploración de la forma y los espacios y los espacios geométricos .
- Estimula los procesos creativos.





Unidades Temáticas.

- Teoría de las Transformaciones.
- Transformaciones Euclidianas.

- Transformaciones Proyectivas de 1º Categoría.

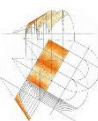
- Transformaciones Proyectivas de 2º Categoría.

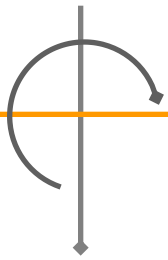
1º Semestre.

- 1º CICLO.

- 2º CICLO.

- 3º CICLO.





Unidades Temáticas.

• Proyección Afín Ortogonal

• Transformación de formas tridimensionales en formas bidimensionales.

• Transformaciones de elementos proyectantes

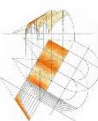
• Perspectiva.

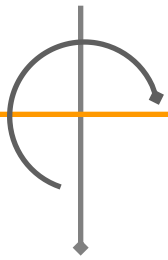
2º Semestre.

• 4º CICLO.

• 5º CICLO.

• 6º CICLO.



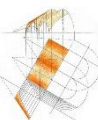
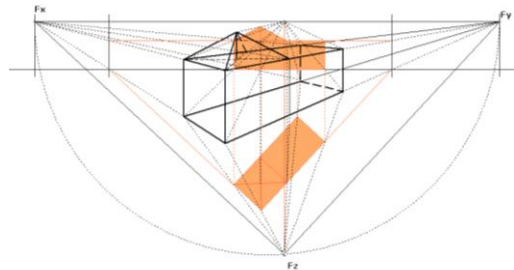
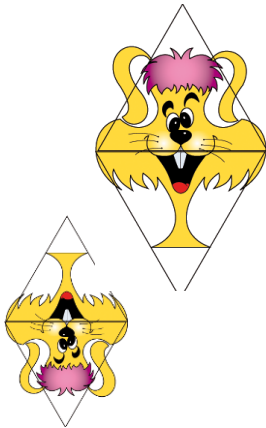


1º Ciclo.

- Teoremas.
- Definiciones y notaciones.

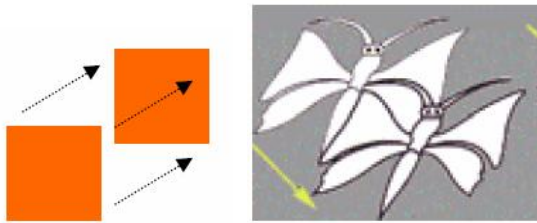


- Teoría de las Transformaciones.
- Isometrías, o Movimientos Rígidos.
- Isomórficas
- Anamórficas.





Isometrías.

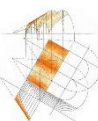
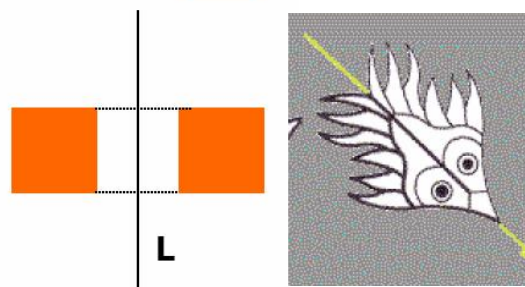
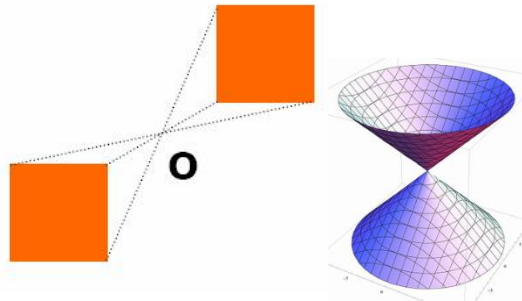


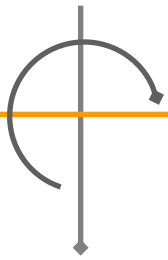
- Transformaciones que mantienen la forma. Formas congruentes .

- Traslaciones.

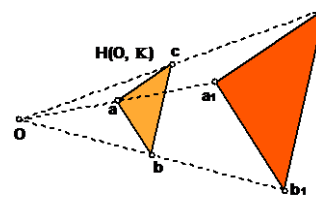
- Rotaciones.

- Reflexiones con respecto a un punto y a una recta.



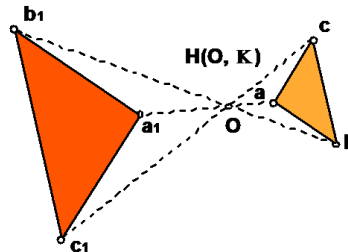


Transformaciones Isomórficas.

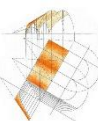


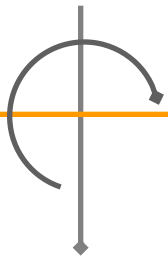
- Producto de Transformaciones que generan formas semejantes.

- Homotecia Directa, la forma aumenta de tamaño.

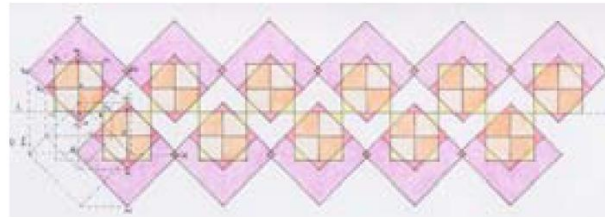
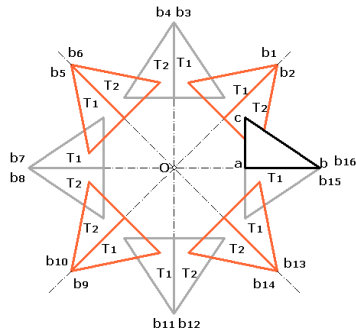


- Homotecia Inversa, la forma disminuye de tamaño.





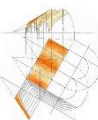
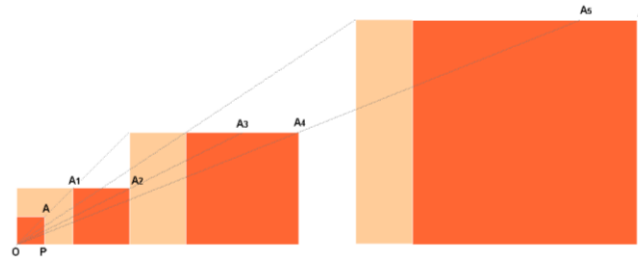
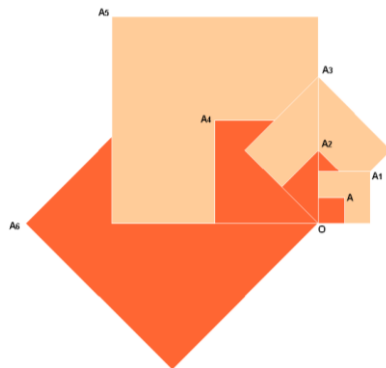
Combinación de Transformaciones.

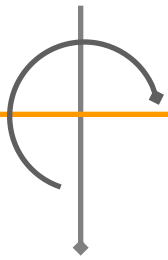


- Producto de Transformaciones que generan simetrías traslatorias y rotatorias.

- Simetrías donde intervienen transformaciones que dan origen solo a formas congruentes

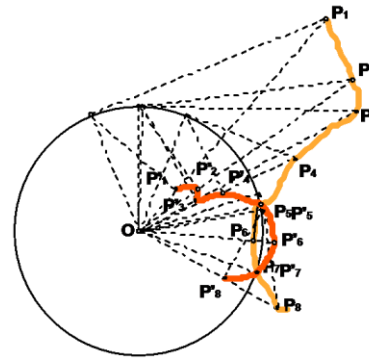
- Simetrías donde interviene la transformación homotecia.





Transformaciones Anamórficas.

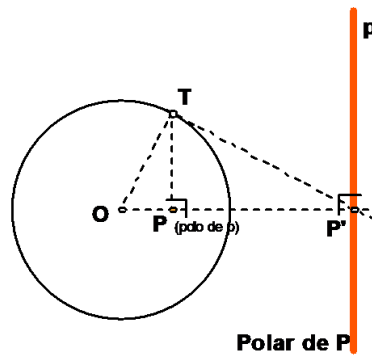
• Transformación involutiva.



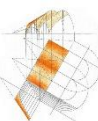
• Transformaciones que dan origen a nuevas formas.

• Inversión.

• Polos y Polares de Puntos y Curvas.

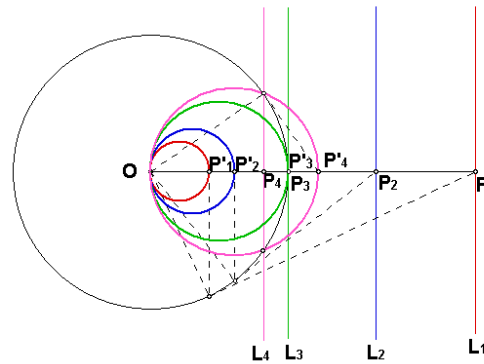
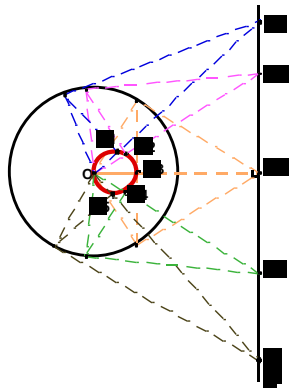


• Polo Polar



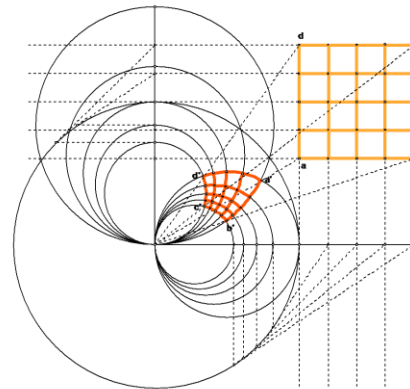
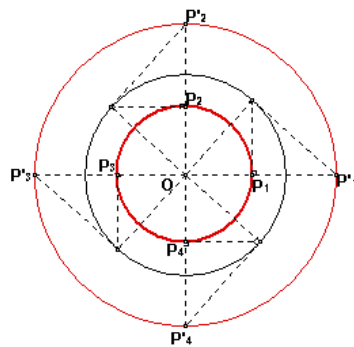


Transformación Inversión.



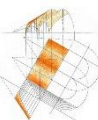
• Inversos de puntos y curvas.

• Rectas que se invierten en circunferencias.



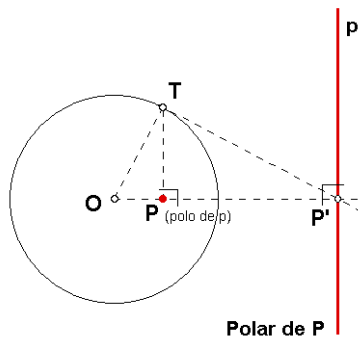
• Circunferencias que se invierten en circunferencias

• Aplicación.

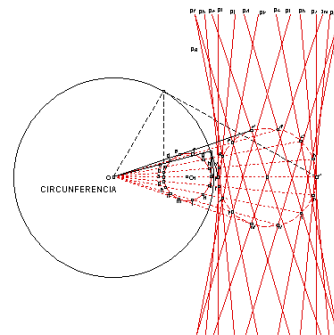
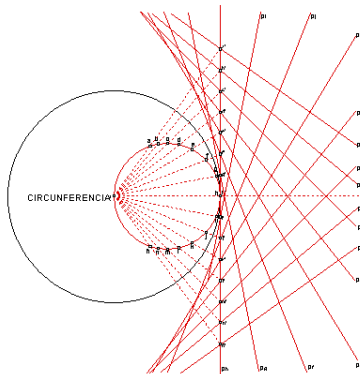
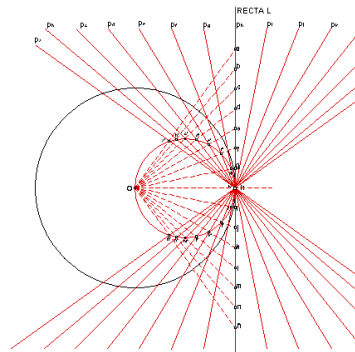




Transformación Polo Polar.



Polar de P

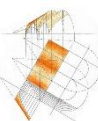


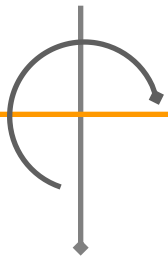
- Polares de puntos, rectas y circunferencias.

- Polar de un Punto.

- Polar de una Recta

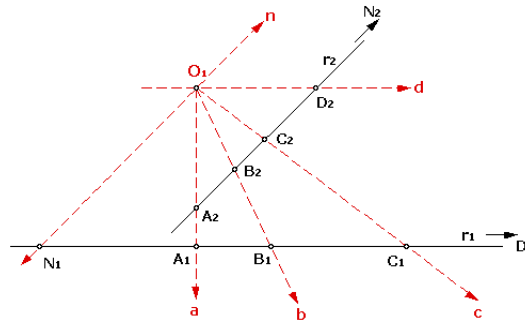
- Polar de una Circunferencia.





2º Ciclo.

- Plano y espacio proyectivo.

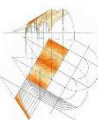
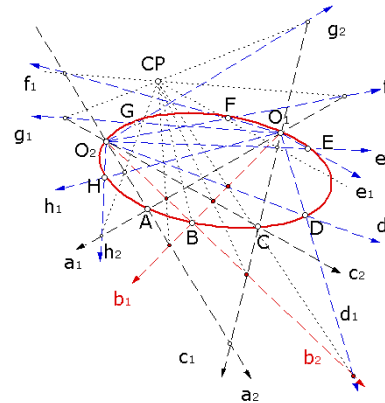
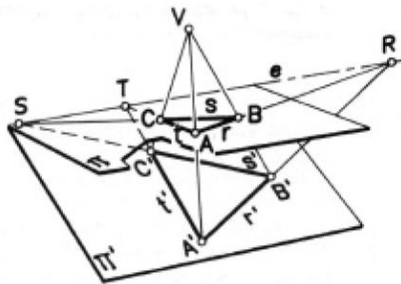


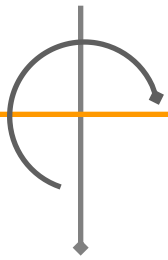
- Transformaciones Proyectivas de 1º Categoría.

- Alineación y Haces.

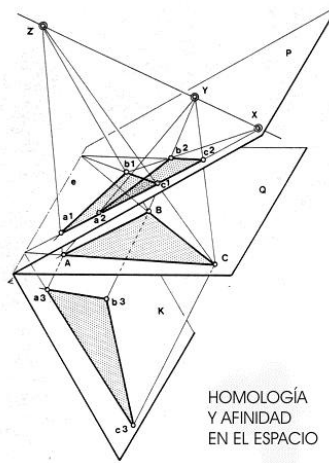
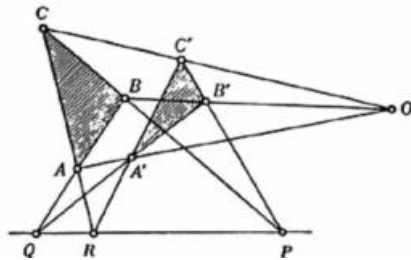
- Concepto Homología

- Definición de Cónicas.



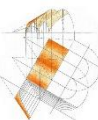
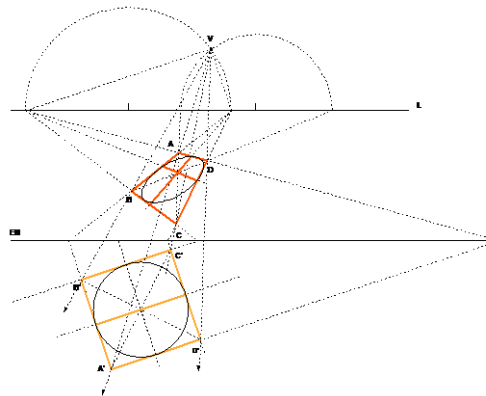
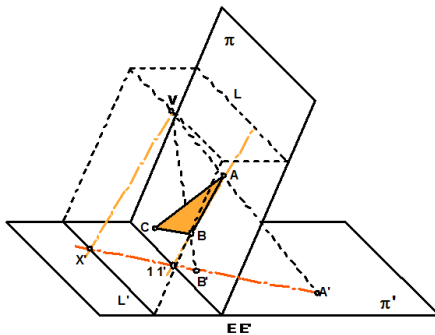


3º Ciclo.



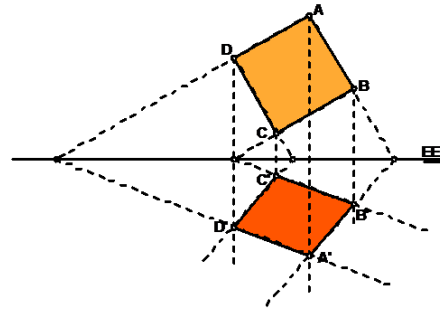
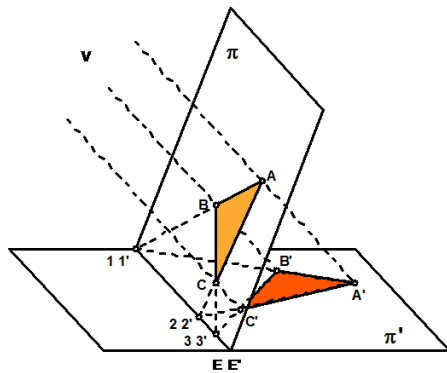
HOMOLOGÍA
Y AFINIDAD
EN EL ESPACIO

- Transformaciones Proyectivas de 2º Categoría.
- Teorema de Desargues.
- Definición Espacial de Homología
- Homología en su caso general.
- Homología de transformaciones Euclidianas.

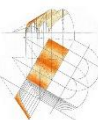
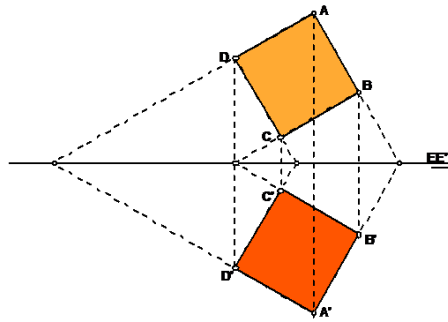
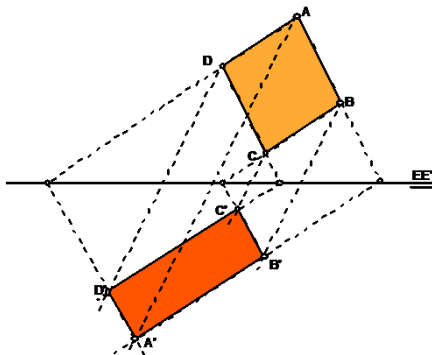


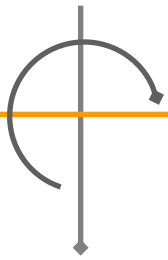


3º Ciclo.

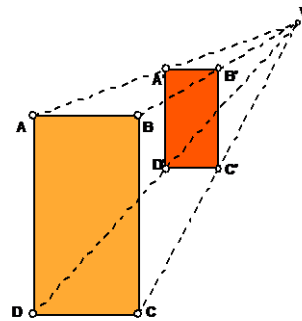
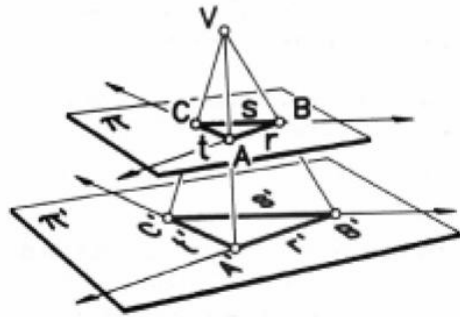


- Homología Afín.
- Homología Afín Recta
- Homología Afín Oblicua.
- Homología Afín Simétrica.



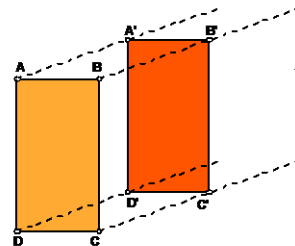
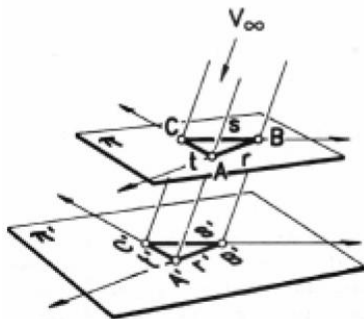


3º Ciclo.

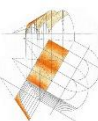


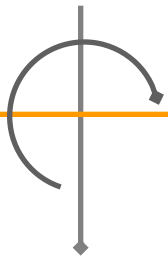
• Casos Particulares de Homologías.

• Homotecia.



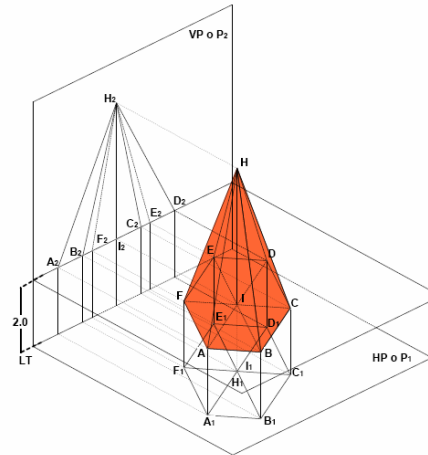
• Homotecia Paralela.



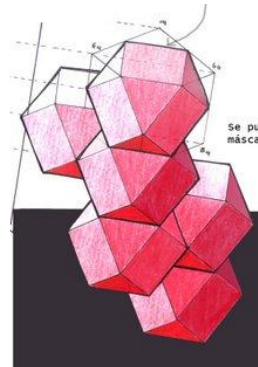
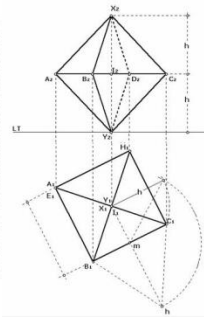
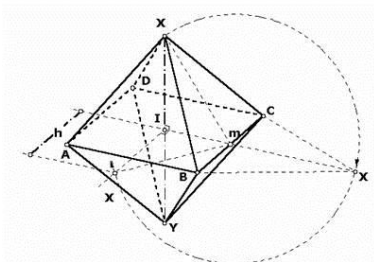


4º Ciclo.

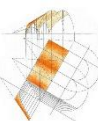
- Transformación homológicas de formas tridimensionales en formas bidimensionales.

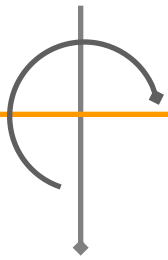


- Proyección Afín Ortogonal.
- Proyección de sólidos en planos de proyección.

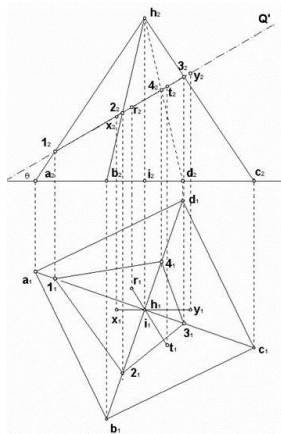
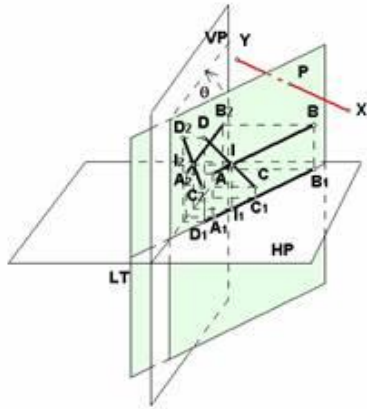


- Determinación de elementos fundamentales
- Determinación de Planos, inclusión de elementos y sus relaciones

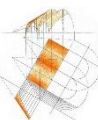
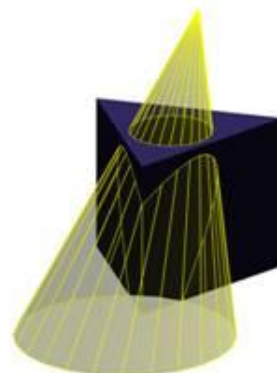
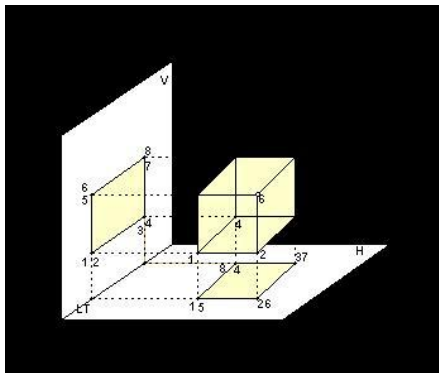




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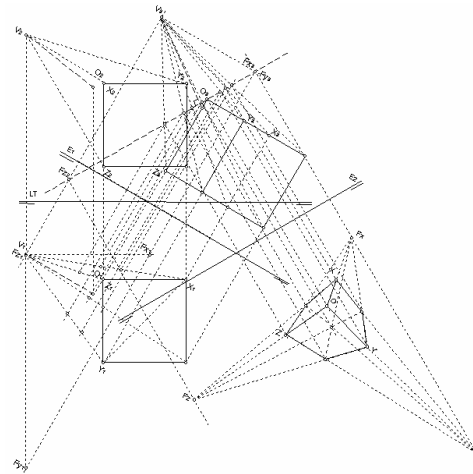
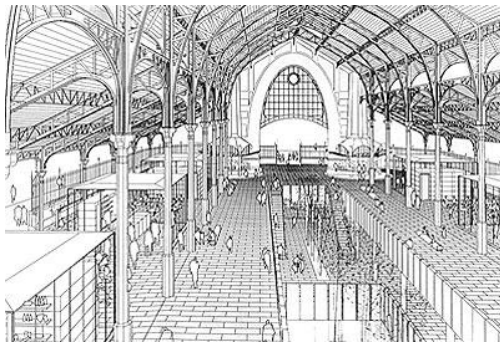


- Proyección Afín Ortogonal.
- Penetración de rectas en planos.
- Secciones Planas.
- Verdaderas Magnitudes.
- Intersección de Volúmenes

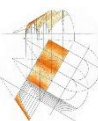
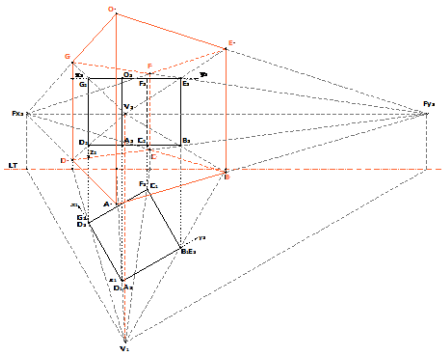




6º Ciclo.



- Perspectiva.
- En su caso General.
- Perspectivas Particulares.



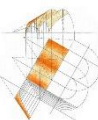


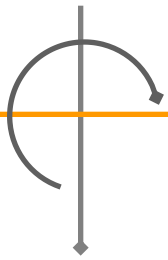
METODOLOGIA.

- CLASES EXPOSITIVAS: Trabajos individuales y grupales.
- CLASES PRÁCTICAS, con apoyo instrumental y computacional (Taller).

EVALUACIÓN.

1º SEMESTRE	%	FECHA	2º SEMESTRE	%	FECHA	EJERCICIOS/TAREAS	%
CONTROL N° 1	15	01/06/12	CONTROL N° 3	15	14/09/12	1º SEMESTRE	10
CONTROL N° 2	15	27/07/12	CONTROL N° 4	15	26/10/12	2º SEMESTRE	10
			CONTROL N° 5	20	07/12/12		
Total Controles	30%			50%		Total Ejercicios	20 %





BIBLIOGRAFIA.

NOMBRE	AUTOR	EDITORIAL
Apuntes de Geometría	Marcelo Valenzuela V	Imprenta FAU.
Geometría Superior y Aplicada	Fernando Izquierdo Añenzi	Dossat
Geometría Descriptiva	Fernando Izquierdo Añenzi	Dossat
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Geometría Descriptiva	Mirror C. Hawk	McGraw Hill
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