

# Runtime Utilities

Various Utilities

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## PerkinsStringUtils

This small library has one function: Word Wrapping for the UiAsciiString Tile. Attribution in C# source and in "Third Party Notices" in the Asset Store package.

## EditorBridge

This provides Editor support for Tiles and other code which otherwise would not be able to access code in an Editor folder. Doesn't exist in a build.

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## TileUtils

TpTileUtils is a set of utility/convenience functions which are very useful when dealing with tiles and Tilemaps.

## Transform Utilities

These can be used to get or set tilemap sprite transform components and colors.

## BoundsInt Utilities

BoundsInts are used throughout Tilemap-land and inside the TilePlus system.

## 4- and 8-way Position Utilities

Given a tile's position, there are either four or 8 possible adjacent locations.

- Up, Right, Down, Left
- Up, RightUp, Right, RightDown, Down, LeftDown, Left, LeftUp

These positions are encoded into Enums: the values are in clockwise order.

Utilities in this group can be used to obtain adjacent, opposite, or perpendicular positions.

## Others

Simple block deletions, tile sprite utilities, and RectInt to BoundsInt conversions.

# Complete List

## Transform Utils

ScaleMatrix(Vector3 scale, Vector3 position) : Matrix4x4

RoundVector3(Vector3 input, int digits) : Vector3

GetTransformComponents(Tilemap map, Vector3Int position, out Vector3 tPosition, out Vector3 tRotation, out Vector3 tScale) : void

GetTransformComponents(Matrix4x4 transform, out Vector3 tPosition, out Vector3 tRotation, out Vector3 tScale) : void

GetTransformRotation(Tilemap map, Vector3Int position) : Vector3

GetTransformPosition(Tilemap map, Vector3Int position) : Vector3

GetTransformScale(Tilemap map, Vector3Int position) : Vector3

SetTransform(Tilemap map, Vector3Int position, Vector3 tPosition, Vector3 tRotation, Vector3 tScale) : Matrix4x4

MakeMatrix2D(Vector3 position, Vector3 rotation, Vector3 scale) : Matrix4x4

GetTileSpriteRotation(TilePlusBase tpb) : Vector3

SetTileSpriteRotation(TilePlusBase tpb, Vector3 value, bool constantScaleAndPosition) : void

GetTileSpritePosition(TilePlusBase tpb) : Vector3

SetTileSpritePosition(TilePlusBase tpb, Vector3 value, bool constantRotationAndScale) : void

GetTileSpriteColor(TilePlusBase tpb) : Color

SetTileSpriteColor(TilePlusBase tpb, Color value) : void

GetTileSpriteScale(TilePlusBase tpb) : Vector3

```
SetTileSpriteScale(TilePlusBase tpb, Vector3 value, bool constantPositionAndRotation) : void
```

## Bounds Int Utils

```
CreateBoundsInt(Vector3Int position, Vector3Int size, bool forceZtol) : BoundsInt
```

```
RandomPosInBounds(Bounds bounds) : Vector3
```

```
BoundsFromOrthoCamera(Camera? camera, bool square, float scale, bool zeroZ) : Bounds
```

```
LargestBoundsInt(IEnumerable<BoundsInt> input) : BoundsInt
```

## 4 Way Position Utils

```
DirectionType4 (Enum): None, Up, Right, Down, Left
```

```
NextDirectionType4(DirectionType4 d) : DirectionType4
```

```
Get4WayAdjacent(Vector3Int center) : Vector3Int[]
```

```
Get4WayAdjacentHashSet(Vector3Int center, HashSet<Vector3Int>? hashSet, bool clear) : void
```

```
Get4WayRandomDirection() : DirectionType4
```

```
Get4WayPerpendicular(Vector3Int center, DirectionType4 dir, Vector3Int[]? output) : void
```

```
Get4WayNextInOppositeDir(Vector3Int position, DirectionType4 dir) : Vector3Int
```

```
Get4WayOppositeDirectionType(DirectionType4 dir) : DirectionType4
```

```
Get4WayAdjacent(Vector3Int position, DirectionType4 dir) : Vector3Int
```

## 8 Way PositionUtils

```
DirectionType8 (Enum): None, Up, RightUp, Right, RightDown, Down, LeftDown, Left, LeftUp
```

```
NextDirectionType8(DirectionType8 d) : DirectionType8
```

```
Get8WayAdjacent(Vector3Int center) : Vector3Int[]
```

```
Get8WayAdjacentHashSet(Vector3Int center) : HashSet<Vector3Int>
```

```
GetRandomDirection() : DirectionType8
```

## Miscellaneous

```
DeleteTilesFromPositionList(Tilemap map, Vector3Int[] positions) : void
```

```
DeleteTilesFromPositionList(Tilemap map, IEnumerable<Vector3Int> positions) : void
```

```
DeleteTilePlusBaseBlock(Tilemap map, IEnumerable<TilePlusBase> tiles) : void
```

```
GetTrueBoundsForTileSprite(Tilemap? map, Vector3Int position) : Bounds
```

```
GetTileSpriteIntegerSize(Tilemap map, Vector3Int position) : Vector2Int
```

```
GetTileSpriteSize(Tilemap map, Vector3Int position) : Vector2
```

```
GridPositionsSurrounding(Vector3Int gridPosition) : RectInt
```

```
RectIntFromBoundsInt(BoundsInt boundsInt, Vector3Int offset) : RectInt
```